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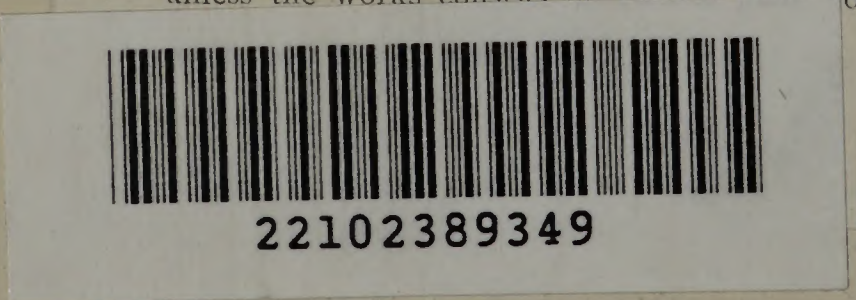

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OF

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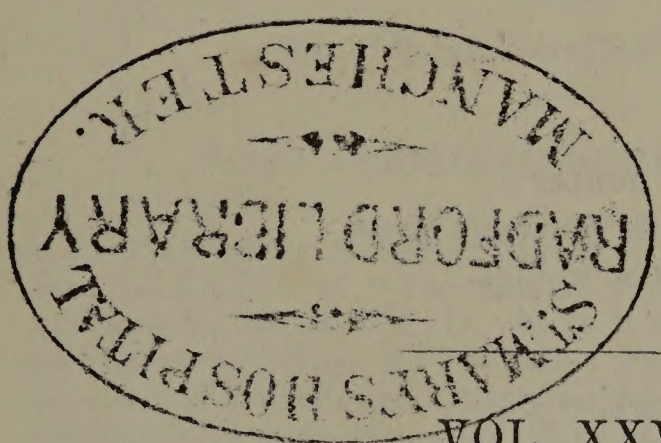

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iii. Sanitary Science: its Past and Present State. The "Address in Medicine," delivered at the twenty-fifth Meeting of the British Medical Association, held at Nottingham July 28, 29, and 30, 1857. By Wm. Tindall Robertson, M. D. Edinburgh, Extr. L. R. C. P. London, &c., &c.

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ii. Nogle Bemærkinger angaaende Betydningen og Behandlingen af enkelte Uterinaffectioner. Af Prof. Dr. F. C. Faye.

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iv. Den Sanitära Frågan. Af Dr. C. G. Grähs.

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v. Folkräkningen i Stor Brittannien år 1851. By Dr. Grähs.

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vi. Välgörenhets-Kongressen i Brüssel år 1856. Rapport afgifven till K. Ecklesiastik-Departementet. Af Dr. C. G. Grähs.

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3. Sanitary Science, its Past and Present State: the Address in Medicine delivered at the Twenty-fifth Meeting of the British Medical Association. By W. J. Robertson, M. D., &c. London: Walton and Maberly, 1858. Pamphlet, pp. 32.

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14. The Causes of Idiocy: being a Supplement to a Report by Dr. S. G. Howe, and the other Commissioners appointed to Inquire into the Condition of the Idiots of the Commonwealth of Massachusetts; with an Appendix. Edinburgh: Maclachlan and Stewart, 1858. 8vo. pp. 79.

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18. On Dislocations and Fractures. By Joseph Maclise, F. R. C. S. London: Churchill, 1858. Fasciculus IV.

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20. Archives of Medicine. Edited by L. S. Beale, M. B., &c. London: Churchill, 1858. Part II.

21. The Use of the Microscope in Clinical Medicine. Illustrated. By L. S. Beale, M. B., &c. No. III. Urine, Urinary Deposits, Calculi, Sputum, Vomit. London: Churchill, 1858.

22. Medical Jurisprudence. By A. S. Taylor, M. D., &c. Sixth Edition. London: Churchill, 1858. Fcap. 8vo. pp. 976.

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25. Medical Charities, Ireland. Sixth Annual Report of the Commissioners for Administering the Laws for Relief of the Poor in Ireland. Dublin: Thom and Sons, 1858. 8vo. pp. 98.

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32. Du Typhus de l'armée d'Orient. Par le Docteur F. Jacquot. Paris: Masson, 1858. 8vo. pp. 435.

33. Traité de l'électricité. Par J. Gavarret. Paris: Masson, 1858. Two vols. Post 8vo, pp. 596, and 604.

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35. Fordhandlinger ved de Skandinaviske Naturforskeres Syvende Möde. i Christiania den 12–18 Juli, 1856. Christiania: Werner & Comp., 1857. 8vo. pp. 658.

36. L'Enseignement Clinique en Allemagne particulièrement a Vienne. Projet de Réforme pour l'Enseignment Clinique en France. Par le Docteur Gallavardin. Paris: Baillière et Fils, 1858. 8vo. pp. 78.

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44. The British Army in India; its Preservation by an Appropriate Clothing, Housing, Locating, Recreation, Employment, and Hopeful Encouragement of the Troops. With an Appendix on India, &c., &c. By Julius Jeffreys, F.R.S., formerly Staff-Surgeon of Cawnpore. London: Longmans, 1858. 8vo. pp. 393.

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46. The British Journal of Homœopathy. London: Groombridge and Sons. No. LXV., July, 1858.

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48. Twenty-eighth Annual Report of the Belfast District Hospital for the Insane Poor. 1858. Pamphlet, pp. 29.

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52. On the Transmission of Diseases between Man and the Lower nimals. By W. Lauder Lindsay, M.D., F.L.S. Reprint, pp. 16.

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1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. Published Quarterly. London: Churchill. (Received regularly.)

2. The Edinburgh Medical Journal. Published Monthly. Edinburgh: Sutherland and Knox. (Received regularly.)

3. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Received regularly.)

4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. London: Churchill. (Received regularly.)

5. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)

6. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Published Monthly. London: Taylor and Francis (Received regularly.)

7. The Lancet. A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News. Edited by Thomas Wakley, Surgeon. Published Weekly. London. (Received regularly.)

8. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)

9. Association Medical Journal. Edited by A. Wynter, M. D. Published Weekly. London: Honeyman. (Received regularly.)

10. The Medical Circular. Published Weekly. London: Harris. (Received regularly.)

11. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received regularly.)

12. The Asylum Journal of Mental Science. Edited by J. C. Bucknill, M. D. London: Longmans. (Received regularly.)

13. The Glasgow Medical Journal. Published Quarterly. Griffin and Co. (Received regularly.)

14. The Athenæum—Journal of English and Foreign Literature, Science, &c. Published Weekly. London. (Received regularly.)

15. The Dublin Medical Press. Published Weekly. (Received regularly.)

16. The Dublin Hospital Gazette. Published twice a Month. (Received regularly.)

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AUSTRALIA.

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AMERICA.

21. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Published Quarterly. Philadelphia: Blanchard and Lea. (Received regularly.)

22. The North American Medico-Chirurgical Review. A Bi-monthly Journal. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. Philadelphia: Lippincott and Co. (Received regularly.)

23. The New York Journal of Medicine. Edited by Stephen Smith, M. D. Published Monthly. New York. (Received regularly.)

24. The American Journal of Science and Arts; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. Published Bi-monthly. New Haven. (Received regularly.)

25. The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica, Quarterly. (No. 3, Vol. XIII., not received.)

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FRANCE.

28. Gazette Médicale de Paris. Published Weekly. Paris. (Received regularly.)

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30. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c. Published Monthly. Paris: Labé. (Received regularly.)

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33. La Lancette Française, Gazette des Hôpitaux civils et militaires. Published three times a Week. Paris. (Received regularly.)

34. Le Moniteur des Hôpitaux, Revue Médico-Chirurgicale de Paris. Redacteur en chef, M. H. de Castelnau. Paris. Published three times a Week. (Received regularly.)

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38. Mémoires de l'Académie de Médecine. (Received regularly.)

39. Revue de Thérapeutique Médico-Chirurgicale. Published twice a Month. Paris: Dr. A. Martin-Lauzer. (Received regularly.)

40. Journal de Médecine et de Chirurgie Pratiques a l'Usage des Médecins. Published Monthly. Par Lucas-Championnière. Paris. (Received regularly.)

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42. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Moreau. Published Quarterly. Paris: Victor Masson. (Received regularly.)

43. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Recueil pratique. Par le Docteur Debout. Published twice a Month. Paris. (Received regularly.)

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49. Annales D'Hygiène Publique et de Médecine Légale. Paris. Published Quarterly. (Received regularly.)

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50. Annales D'Oculistique. Fondées par le Docteur Florent Cunier. Published Monthly. Brussels. (Received regularly.)

51. Annales et Bulletin de la Société de Médecine de Gand. Published Monthly. (Received regularly.)

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52. Zeitschrift für rationelle Medicin; herausgegeben Von Dr. J. Henle und Dr. C. v. Pfeufer. Published Monthly. Heidelberg and Leipzig: C. F. Winter. (Received regularly.)

53. Zeitschrift der Kais. Kön. Gesellschaft der Aerzte zu Wien. Redacteur: Professor, Dr. Ferdinand Hebra. Vienna: Gerold. (No. 12, for 1853, Nos. 3, 4, 6, 9, 10, 11, for 1854, No. 1 for 1856, and Nos. 1 and 2 for 1857, not received.)

54. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Published Quarterly. Prague: Karl. André. (Received regularly.)

55. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern. Redigirt von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Würzburg: Stahel. (Received regularly.)

56. Journal für Kinderkrankheiten. Herausgegeben von Dr. Fr. J. Behrend und Dr. A. Hildebrand. Published Monthly. Erlangen: Palm and Enke. (Parts 3 and 4, 1854, 1 and 2, 1855, and 2, 1856, not received.)

57. Wochenblatt der Zeitschrift der Kaiserl. Königl. Gesellschaft der Aerzte zu Wien. Published Weekly. Vienna: Gerold. (Received regularly.)

58. Aerztliches Intelligenz-Blatt. Organ für Bayerns Staatliche und öffentliche Heilkunde. Munich: C. Kaiser. (Received regularly.)

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59. Archiv für pathologische Anatomie und Physiologie, &c., Herausgegeben von R. Virchow. Berlin: G. Reimer. Published Monthly. (Received regularly.)

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SWEDEN.

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ii. The Medical and Legal Relations of Madness, showing a Cellular Theory of Mind and of Nerve Force, and also of Vegetative Vital Force. By Joshua Burgess, M. D.

iii. The Human Mind in its Relations with the Brain and Nervous System. By Daniel Noble, M. D., Visiting Physician to the Clifton Hall Retreat; Consulting Physician to the Manchester Ear Institution, &c., &c.

iv. Report of the Londonderry District Hospital for the Insane, to March 31, 1858. By William Rogan, M. B., Resident Physician.

v. The Seventh Annual Report of the County Asylum for the Insane at Colney Hatch. D. F. Tyerman, M. R. C. S., Medical Superintendent, Male Department. W. G. Marshall, M. R. C. S., Medical Superintendent, Female Department.

vi. Twentieth Annual Report of the Suffolk County Asylum for the Insane, to December, 1858. By John Kirkman, M. D., Physician-Superintendent.

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x. St. Luke's Hospital for Lunatics, for the Year 1856. Henry Stevens, M. B., Physician-Superintendent.

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xiii. Thirty-first Annual Report of the Perth Royal Hospital for the Insane, to June, 1858. By W. Lauder Lindsay, M. D., Physician-Superintendent.

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xvii. Fourteenth Annual Report of the Managers of the State Lunatic Asylum, January 7, 1857. John P. Gray, M. D., Physician-Superintendent.

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xix. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D., D. C. L., President of the Association of Medical Officers of Asylums and Hospitals for the Insane. Nos. 9, 10, 11, and 12. New Series, for the Year 1858.

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xxv. Report of the Commissioners of Lunacy on Insanity and Idiocy in Massachusetts, U. S. A. By Edward Jarvis, M. D.

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2. Seventh Annual Report of the Wilts County Asylum, Devizes, for the year 1857. Pamphlet, pp. 44.

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22. On Dropsy connected with Disease of the Kidneys (Morbus Brightii), and on some other Diseases of those Organs associated with Alluminous and Purulent Urine. Illustrated by numerous Drawings from the Microscope. By W. R. Busham, M. D., &c. London: Churchill, 1858. 8vo. pp. 241.

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25. Compendium der Allgemeinen und Speciellen Heilquellenlehre. Von Dr. Josef Seegen. Vienna: Braumüller, 1857–58. Two Vols. 8vo. pp. 292 and 363.

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4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. London: Churchill. (Received regularly.)

5. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)

6. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Published Monthly. London: Taylor and Francis. (Received regularly.)

7. The Lancet. A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News. Edited by Thomas Wakley, Surgeon. Published Weekly. London. (Received regularly.)

8. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)

9. Association Medical Journal. Edited by A. Wynter, M. D. Published Weekly. London: Honeyman. (Received regularly.)

10. The Medical Circular. Published Weekly. London: Harris. (Received regularly.)

11. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received regularly.)

12. The Asylum Journal of Mental Science. Edited by J. C. Bucknill, M. D. London: Longmans. (Received regularly.)

13. The Glasgow Medical Journal. Published Quarterly. Griffin and Co. (Received regularly.)

14. The Athenæum—Journal of English and Foreign Literature, Science, &c. Published Weekly. London. (Received regularly.)

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16. The Dublin Hospital Gazette. Published twice a Month. (Received regularly.)

17. The Natural History Review: including the Transactions of the Irish Natural History Societies, and of the Geological Society of Dublin. Published Quarterly. Dublin: George Herbert. (Received regularly.)

INDIA.

18. The Indian Annals of Medical Science; or, Half-Yearly Journal of Practical Medicine and Surgery. Calcutta: Lepage and Co. (Received regularly.)

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AUSTRALIA.

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22. The North American Medico-Chirurgical Review. A Bi-monthly Journal. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. Philadelphia: Lippincott and Co. (Received regularly.)

23. The New York Journal of Medicine. Edited by Stephen Smith, M. D. Published Monthly. New York. (Received regularly.)

24. The American Journal of Science and Arts; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. Published Bimonthly. New Haven. (Received regularly.)

25. The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica, Quarterly. (No. 3, Vol. XIII., not received.)

26. The American Journal of Dental Science. Edited by C. A. Harris, M. D., and A. S. Piggot, M. D. Published Quarterly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

27. Charleston Medical Journal and Review. Published Monthly. Charleston, U. S. (Received regularly.)

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28. Gazette Médicale de Paris. Published Weekly. Paris. (Received regularly.)

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NORWAY.

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64. Gazzetta Mediea Italiana Federativa Toscana. Florence. Published Weekly. (Reeeived regularly.)

65. Bulletino delle Scienze Mediehe. Publicato per eura della Soeietà Medico-Chirurgica di Bologna. Published Monthly. (No. 2 for 1855, and Nos. 5, 6, 7, 11, and 12, for 1856, not received.)

66. Giornale Veneto di Scienze Mediche. Published Monthly. (Received regularly.)

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—"*Obstetric Morality:*" *being a Reply to an Article in* No. LXXXVII. *of* "*The Dublin Review.*" By FLEETWOOD CHURCHILL, M. D. T. C. D., M. R. I. A., Fellow of the King and Queen's College of Physicians; Professor of Midwifery and Diseases of Women and Children; one of the Presidents of the Obstetrical Society, &c., &c.

[Read at a Meeting of the Dublin Obstetrical Society, May 12, 1858.]

MY attention having been called to an article in the last Number (April, 1858, p. 100) of "The Dublin Review" on "Obstetric Morality," I have thought the subject of sufficient importance to bring it before the Obstetrical Society. The article is written to show the immorality of the operation of craniotomy under any circumstances, if the child be alive; and although the question has been repeatedly debated in former times, yet as it is comparatively new to the present generation, it appears to me very desirable that those who are now practising midwifery, and those who are preparing to practise it, should know the precise reasons for admitting or rejecting the operation.

I have read the review over very carefully several times, as dispassionately as I could, and I am free to confess that I am

satisfied neither with the theological nor obstetrical reasoning of the author: I strongly suspect, indeed, that the writer is not a medical man.

If any apology be needed for *my* taking up the subject, I trust it will be found in the fact that one of my works (conjointly with Dr. Maunsell's) is taken as the exponent of this "Obstetric Morality." Of the tone of the review towards myself, though somewhat uncharitable in its imputation of motives, I make no complaint; but I should have preferred the third edition of my work being taken as the expression of my present views, instead of the first edition, published sixteen years ago.

In the observations which follow I shall discard all personal feelings, and simply confine myself to the question in debate, and I shall endeavour so to treat the subject as to give no offence to those who may differ from me. In a mixed question like the present, it is perhaps improbable that all should agree, but in differing, it is surely possible that each may give the other credit for the highest motives, and respect him for his conscientious adherence to what he thinks right.

The question at issue—the morality or immorality of destroying a living child by craniotomy—has always been regarded in a threefold aspect, moral, theological, and obstetrical, the latter resting on and inseparably connected with the former, at least in the opinion of one party; so that, although this is not the place for a moral or theological dissertation, nor I the most competent person to undertake it, yet it is impossible to avoid the subject entirely. I shall, however, confine myself to a short statement and examination of the arguments: with this advantage, that the reviewer, having based his theological reasons upon Holy Scripture, an authority to which I implicitly bow, we have, so far, common ground.

I. In the first place, the reviewer objects to the destruction of an unborn babe on the grounds that it is a breach of the sixth commandment, "Thou shalt do no murder;" and also that it is contrary to the denunciation in Genesis, ix. 6:—"Whoso sheddeth man's blood, by man shall his blood be shed, for in the image of God made He man." If the latter text be more than authorization of capital punishment for murder, which I do not deny, it is clear that it must be subject to limitation, otherwise it would prohibit killing in self-defence, or in defence of another, which is considered lawful by the Roman Catholic Church, and it would render war unlawful. If, then, it be thus modified, there is no reason why the limitation may not be extended so as to include the operation in

question, provided I can show that it cannot justly be considered a breach of the sixth commandment.

What, then, constitutes *murder*, and in what does it essentially differ from *killing* or *homicide?* For our present purpose we shall derive the best assistance from the law of the land, which is the highest practical exponent of the law of morals. I am indebted to a distinguished legal friend for the following definitions:—"Murder, then, is the killing any person under the king's peace with *malice prepense, or aforethought*, either express or implied by law:" so say Lord Coke, Sir Matthew Hale, Sergeant Hawkins, &c. "Of this description, the *malice prepense, malitia precogitata*, is the chief characteristic, the grand criterion by which murder is distinguished from any other species of homicide"[a]. "It should, however, be observed, that when the law makes use of the term *malice aforethought* as a description of the crime of murder, it is not to be understood merely in the sense of a principle of malevolence to *particulars*, but as meaning that the fact has been attended with such circumstances as are the ordinary symptoms of a *wicked, depraved, and malignant spirit*, a heart regardless of social duty, and deliberately bent upon mischief"[b].

This malice may be either *express* or *implied by law.* Express malice is when one person kills another with a sedate, deliberate mind and formed design: such formed design being evidenced by external circumstances, discovering the inward intentions, as, lying in wait, antecedent menaces, former grudges, and concerted schemes to do the party harm[c].

Malice is *implied by law* from any deliberate and cruel act, committed by one person against another, however sudden; thus, when a man kills another suddenly, without any, or an inconsiderable provocation, the law implies malice, for no person, unless of an abandoned heart, would be guilty of such an act upon a slight or no apparent cause[d].

I think it will be at once admitted that killing a child in utero, which I shall prove can be by no means born alive, and which must die in a few hours, but the prolongation of whose life, even for those few hours, will most seriously, if not irreparably, endanger that of the mother, cannot be brought under the definition of murder; there is no malice aforethought expressed or implied; it is done from necessity, but without

[a] Blackstone's Commentary, vol. iv. p. 198; Gustinean's Case, 1 Leach, p. 457.
[b] Justice Foster's Crown Law, pp. 256, 262.
[c] 1 Hale, 451; 4 Blackstone's Commentary, p. 199.
[d] East's Pleas of the Crown, cap. v. sect. 2, p. 215; Blackstone's Commentary, vol. iv., p. 200.

any evidence of a "wicked, depraved, or malignant spirit:" it is not, therefore, in any true sense murder. Had there been the slightest reason for thinking it so, I have no doubt that there would have been a provision made by law, just as there has been against criminal abortion: so far from this, "an infant in its mother's womb, not being *in rerum naturâ*, is not considered by law as a person who can be killed *within the description of murder*"[a].

Killing or Homicide is by law divided into three kinds: it is either justifiable, excusable, or felonious. It is *justifiable* where the killing arises from imperious duty prescribed by law, as the lawful execution of a criminal; or is owing to some *unavoidable necessity*, as in the case of an attack on life, property, or chastity, where the death occurs in self-defence. This is admitted by the Roman Catholic authorities, for I find in a little work, with the imprimatur of the Most Rev. Dr. Cullen, the following:—"It is not a sin to defend your own life or *another's life*, chastity, or property of great value, when unjustly attacked, even though it cannot be defended without taking away the life of him who attacks it"[b].

It is *excusable*—1. In case of death by accident, without any culpable neglect, or default, and whilst engaged in lawful occupation or amusement. 2. When death occurs in protecting one's self from an assault, or the like, in the course of a sudden affray, where the slayer had no other probable means of escaping from his assailant.

It is *felonious* in the case of murder or manslaughter.

Now I shall be able to show that craniotomy, under proper circumstances, is "an unavoidable necessity," and if, therefore, it be legally justifiable to take one life for the protection of another, we have precisely the conditions applicable to our case, with this additional justification, that the life we take is forfeited, i. e. it will inevitably cease, as the child *cannot* be born alive.

It is the more important to be satisfied on this point, for it is clear that, so far as craniotomy is concerned, it must be decided on moral grounds, inasmuch as, whether the child dies in utero or is killed, baptism is equally out of the question.

There is an argument frequently used by the reviewer,—"that we are not to do evil that good may follow," about which a few words may not be amiss. It is perfectly true, as an aphorism, but, used as the reviewer uses it, it is a *petitio prin-*

[a] 1 Hale, P. C., p. 433.

[b] "What every Christian must know and do," p. 23, *note*.

cipii, for the "evil" is the very point in dispute. Again, what is meant by "evil"? Pain is an evil, yet we inflict pain to save life,—"doing evil that good may come." That, therefore, cannot be the meaning. It must be moral evil, something involving guilt, which would be unlawful.

Moreover, in the way in which it is applied by the reviewer, it is an accusation by implication,—"we may not do evil," &c., which is what *you* propose to do. It may "be slanderously reported, and some may affirm that we say, Let us do evil that good may come;" but in the true sense of the word "evil," we repudiate the principle as strongly as the reviewer or the Roman Catholic Church.

II. But a second and graver objection, and one that seems to underlie the former, is, that in destroying the fœtus in utero we destroy both soul and body, because it cannot be previously baptized. It is only fair to give the reviewer's own words on this subject:—"It is no less certain that this soul, which has been created by God, and infused into the body at the first moment of existence, has, in the language of holy David, been conceived in iniquities, that is, that it has inherited the stain inflicted on all his posterity by the prevarication of Adam. Nothing defiled can enter into heaven, and the defilement of this soul can only be washed out in the waters of baptism. To it, in common with all mankind, have been addressed the words of the Saviour, 'Unless a man be born again of water and the Holy Spirit, he cannot enter the kingdom of heaven.' It is strange that those who profess to be guided exclusively by Scripture should deny that the external rite of baptism is necessary to salvation, for it is plainly and repeatedly inculcated in the Word of God. That the second birth by water and the Holy Ghost, spoken of in John, iii., means the external rite of baptism, may be inferred from the fact that our Lord's disciples soon after began to baptize, as we learn from the beginning of the following chapter. The word 'to baptize' signifies 'to wash:' and on the very last occasion on which our Lord addressed His Apostles after His resurrection, He told them: 'All power is given to me in heaven and in earth. Going therefore, teach ye all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Ghost.' When the people were melted to compunction of heart by St. Peter's first sermon, they asked what they should do? 'But Peter said to them, Do penance, and be baptized, every one of you, in the name of Jesus Christ, for the remission of your sins. They therefore that received his word were baptized.' That this baptism was by water is manifest by what occurred when

Philip preached Jesus to the eunuch; for 'as they went on their way, they came to a certain water, and the eunuch said, See, here is water, what doth hinder me to be baptized? And they went down into the water, both Philip and the eunuch, and he baptized him.' Ananias told St. Paul, when sent to him by God, 'Rise up, and be baptized, and wash away thy sins.' So also, when St. Peter saw the Holy Ghost falling on the Gentiles, he exclaimed, 'Can any man forbid water, that these should not be baptized?' This idea is strongly conveyed in various places by St. Paul. 'Christ loved the Church,' he says, 'and delivered himself up for it, that he might sanctify it, cleansing it by the laver of water in the word of life.' Again, he calls the 'laver of water,' the 'laver of regeneration, and renovation of the Holy Ghost,' alluding manifestly to our Lord's words (John, iii.), and thus clearly establishing that the regeneration, without which no one can enter into the kingdom of God, is baptism by water. 'Not,' he says, 'by works of justice which we have done, but according to His mercy he saved us, by the laver of regeneration, and the renovation of the Holy Ghost.'"—p. 125.

Now, putting aside the question of when the soul is first joined to the body, on which subject Holy Scripture is silent, I am quite prepared to admit simply and implicitly the authority of the texts quoted. I do not deny that baptism was by water, nor that baptism is one of the sacraments "generally necessary to salvation;" but all these texts involve one condition, viz., the *possibility* of baptism. This, I think, must be admitted *primâ facie*, and I object to apply such texts to cases for which we have no shadow of proof that they were intended. It appears to me that the blessings of baptism, and the penalties for its neglect, can be and were intended only to apply to those children whose baptism was possible. The duty and the power must be correlatives. Now of children dying in utero nothing whatever is said in Holy Scripture, yet my reviewer deduces, from the texts above quoted, the doctrine that the souls of such children are lost.

Of course, if the reviewer had stated that the operation of craniotomy had been prohibited by the Roman Catholic Church, there would have been no necessity for argument[a]. The members of that Church would feel bound by its decision, and it would have been no business of mine to contest the

[a] I do not pretend to determine the exact authority of the following extract, although it is not improbable that it may have been the "exciting cause" of the review:—"Sedulam operam dent sacerdotes, ut quantum poterunt, impediant nefandum illud scelus quo, adhibitis chirurgicis instrumentis, infans in utero interfici-

point; but as he has made it depend upon reasoning from Holy Scripture, I have felt quite at liberty to question the accuracy of his conclusions.

The teaching of the Church of England on the subject of baptism is to be found in her Book of Common Prayer, and is so accessible, and indeed so well known, that any detail is quite unnecessary here. She recognises baptism as one of the sacraments "generally necessary to salvation," and declares that "it is certain by God's Word, that children which are baptized, dying before they commit actual sin, are undoubtedly saved." But in accordance with her declaration that "Holy Scripture containeth all things necessary to salvation: so that whatsoever is not read therein, nor may be proved thereby, is not to be required of any man that it should be required as an article of the faith, or be thought requisite or necessary to salvation:" not having found any expression as to the result to those dying unbaptized, when baptism is impossible, she is silent, content to leave their future lot to the loving-kindness and tender pity of Him who died for all.

Morally and theologically, then, the case stands thus:—My reviewer contends that destroying the child in utero is murder. I have proved, on the highest legal authority, that this stigma is unjust, and that it does not come under any true definition of murder, inasmuch as it involves no malice; that it is even something less than justifiable killing, inasmuch as the child's death is inevitable without our interference; we do but hasten it.

Again, he maintains that baptism being a sacrament essential to salvation, all children dying or destroyed in utero are lost. I say, on the contrary, that his authority from Scripture fails, inasmuch as in the cases quoted baptism was possible; whereas in these it is not.

III. Now let us turn to the obstetrical side of the question; and our first endeavour must be to recognise, and in recognising to define, the limits of the responsibility devolving upon the accoucheur, both as regards the child and the mother.

No man possessed of common human feelings, particularly if he have children of his own, can fail to feel the utmost tenderness towards the feeble being he is to usher into the world. Even if we leave the soul out of consideration, the fact

tur. Omnis fœtus quocunque tempore gestationis editus, baptizetur, vel absolute, si constet de vitâ; vel sub conditione, nisi evidenter pateat eum vita carere."—*Decreta Synodi plenariæ Episcoporum Hiberniæ, apud Thurles habitæ anno* 1850. Article "De Baptismo," p. 20.

of a human life being involved will be sufficient to insure the utmost efforts of skill and attention. The accoucheur is responsible that no hygienic arrangement shall be neglected, no errors of management committed, and no assistance withheld, either during the labour or afterwards, which may tend to secure life and health to the child. The records of modern practice show how steadily this object has been kept in view. The improved management of the first stage of labour shortens the duration of the second, by the prolongation of which the life of the child is threatened. The action of the second stage, when too tedious, is often quickened by the ergot of rye, and we are saved the necessity of a recourse to instrumental assistance. And when we are obliged to assist in this way, I am certain that in every case where there is a possibility of success, those instruments are preferred which involve no necessary injury to the child. A comparison between the relative frequency of operations with the forceps and crotchet at present and in former times, both in this and other hospitals, will bear out the truth of this remark. And in all the modern text-books this rule is emphatically laid down. For myself I can truly assert that I have always taught this in my lectures and in my writings, and in practice I have rigidly followed the same principle, that the child is to be saved, if possible. I therefore demur to the reviewer's sweeping assertion, that we evince great indifference to infantile life. The saddest consummation of an anxious attendance is the necessity of *hastening* the death of an unborn babe, in order that the mother's death may not be thrown upon us also.

But although the reviewer says little about it, we must not forget that we are equally responsible for another life, the mother's, and that of immeasurable present value to her family and to society; and special precautions are accordingly taken. Much of the care to which I have alluded is equally for the benefit of the mother, and if some risk be occasionally incurred to secure a living child, extraordinary care is taken to render that risk as small as possible. The responsibility does not terminate with delivery, but extends until complete recovery. For one moment just look at the interests involved in this recovery. The husband, whose happiness is bound up in the life of his wife, and who has intrusted that to us; other children, it may be, whose well-being is dependent upon their mother; to say nothing of a circle of friends and dependents who look to her for comfort and guidance; and all these interests now hanging in the balance, form very onerous items in our calculations of responsibility.

Such responsibility we incur every day, in every case, but it is only felt as a heavy burden in difficult or impracticable cases. Then we feel that there must be some limitation to it, inasmuch as our power is restricted: we do not hold life and death in our hands—we do not determine the character of the labour. What, then, are those limits beyond which our responsibility does not extend? It appears to me, that *our responsibility is exactly in proportion to our command of the essential conditions of success.* Not that we are responsible for success, for that depends upon a Higher Power; but that, as far as we are concerned, all the means of success within our control shall be applied in a manner and at a time most likely to insure it. Now the first and most essential condition, both for the mother and the child, is *timely delivery*, and if we have the power, we are responsible for its exercise in such a manner as will benefit both. Suppose, for example, a case of powerless labour, suitable for the forceps; if we carelessly allow the labour to continue so long as to involve the death of the child, we are as much responsible for its death as if we had recourse to destructive instruments, instead of delivering it by the forceps.

But if it be *physically* impossible that the child can be born alive, then I hold that the accoucheur's responsibility for its life ceases entirely,—no blame rests upon him for its death. Nor do I believe that he can be held responsible in the ordinary meaning of the term, although, in the case supposed, he has to hasten the child's death to secure another life, for which, so far as delivery is concerned, he is unquestionably, and in the fullest sense of the word, directly responsible.

For I would beg you to consider seriously the different position in which we stand as regards delivery, towards the child and towards the mother. Delivery is essential to the safety of both: it *may* be incompatible with the life of the child, but it *can* always be accomplished before the life of the mother is seriously compromised. Having, therefore, the command of the essential condition of success, the full responsibility rests upon us, that so far the mother's life shall be insured; and as all responsibility for the child has ceased, we say that the mother becomes our sole object.

It is the due appreciation of these relative responsibilities in difficult cases that distinguishes the wise and experienced accoucheur: he preserves a just equipoise between them so long as it is possible to fulfil both, and recognises the proper moment when one ceases. *One*, I say, not *either:* for I protest, as strongly as my reviewer, against the notion which he

attributes to *us*[a], that we *choose which of the two lives we shall save*, a notion as false in theory as it is in practice. No man *dare make such a choice*, for we have neither the necessary knowledge, nor the right, nor the authority, to decide which is the more important life, and best worth preserving.

And *no one ever does make such a choice.* Perhaps the least suspicious evidence I can adduce is to refer to the cases to which, in my own book, the operation of craniotomy is said to be applicable. You will find that, in all, the child is either presumably dead, or the labour is mechanically impracticable with safety to the child. So that, without hesitation or limitation, I would lay it down as a canon, that *craniotomy is never to be contemplated when a living child can, by any means compatible with the safety of the mother, be delivered,* "*per vias naturales,*" and upon this rule I invariably act.

This rule happily limits the number of such painful cases; yet, although not numerous, instances do occur in which I believe craniotomy to be not only necessary and justifiable but imperatively demanded, even though the child be alive, if we would not voluntarily incur the responsibility of the mother's peril, and perhaps death: and upon this class of cases I shall trouble the Society with some observations in answer to my reviewer. He especially refers to cases of mechanical disproportion from narrowness of the pelvis, and from a hydrocephalic head. Both these classes, and some others, involve merely questions of mechanical disproportion, and may, for our present purpose, be treated together; but I shall add a few words separately on hydrocephalic children.

Now in order to meet the question fairly, I shall *assume* that we have to deal with the case of a pelvis so narrowed at either brim or outlet that a living child, even aided by the forceps, cannot pass, but through which a mutilated child can be extracted, without undue risk of injury to the mother; and it matters little to the argument whether the difficulty be from deformity of the bony tissue, from a fixed irreducible tumour,

[a] The reviewer states that "this seems to have been the opinion of the French doctors who attended the Empress Maria Louisa during her accouchement, for they consulted the first Napoleon as to whether they should spare the mother or child, in case they found it necessary to kill one of them." I believe that this is about as true as the phrase attributed to General Cambronne,—"Les guides meurent mais ne se rendent pas;" or Wellington's "Up, Guards, and at them," both of which were denied by the supposed authors. In truth, M. Dubois was too experienced a man to make such a speech: if anything *like it* was made, it was, probably, a request to know whether the mother was to be *allowed to die, because the child could not be born alive.* And let me just remind the reviewer, in any case, that the parties were of his own Church.

or from excess of bulk on the part of the child. I say I must *assume*, for the sake of the argument, such a case, although I am met at the outset by the objection on the part of the reviewer, that in practice we cannot be sure of such cases, for that there is little certainty, and no uniformity, in the measurements given by authors: that, in fact, they are not agreed about the size of the aperture through which a living child *cannot* pass. This is certainly true, though the difference is not great, and it is a difficulty which would be seriously felt in many cases if we had to give an opinion, *à priori*, or before the commencement of labour. But after labour has commenced, the position of the accoucheur is quite changed, and he has acquired new and decisive means of forming a correct opinion. He can compare the size of the aperture with the size of the child's head, for they are in close apposition: he has the evidence of what hours of strong pains can do towards forcing the head downwards; nay, more, he can test the applicability of the forceps, whether they can be introduced, and whether, when introduced, he can draw down the head. With these advantages I undertake to say that no man will find any difficulty in deciding whether a patient can be delivered without craniotomy or not.

Let me now remind you of the course of a labour of this kind when left to nature. During the *first stage* no bad symptoms appear, nor for some time after the commencement of the *second*, nor is the child in present peril; but after a time somewhat varying and uncertain, indications of constitutional suffering are developed,—the symptoms of powerless labour, in short,—and from that moment the mother may be said to be in danger, which is fearfully increased by every hour's delay and suffering. In process of time the symptoms become still more formidable, and involve so much general derangement that the evil effects continue after delivery, and if this be not effected, the patient will ultimately die in a state of coma or convulsion, or, perhaps, before this final stage, the walls of the uterus may give way whilst we are waiting, and death result from the laceration. If the woman be delivered within a reasonable time after the setting in of unfavourable symptoms, they shortly disappear, and her recovery will, in almost all cases, be complete. If the labour be allowed to continue, and exactly in proportion to the delay, the recovery will be less favourable, and the danger after delivery greater, until we arrive at that point of time when delivery itself cannot save the mother. At what period of the labour the death of the child, which is inevitable, will occur, it is impossible to state

with any accuracy. It does, doubtless, sometimes take place comparatively early, perhaps before any very bad symptoms have set in; but I feel little doubt that, as a general rule, it is not until a much later period, in fact not until the mother is in imminent peril, in many cases not until the last stage.

Now, what is the right and proper thing to be done in such cases? The child we shall assume to be living, but it is physically impossible to extract it alive through the passages. The mother is in great danger, which increases rapidly, and they will inevitably both die if let alone. We may (at least for the present) dismiss the question of baptism, as that is impossible, and there are two courses open to us:—1. To wait until we may reasonably suppose the child to be dead, and then perforate and deliver, regardless of the consequences to the mother; or, 2. To perforate as soon as the bad symptoms set in, after having assured ourselves of the impossibility of using the forceps, and so secure the life of the mother. The reviewer indicates a third method, the Cæsarean section, which I shall examine presently. In our choice of these two methods the reviewer and I are at issue; the conclusions at which we arrive are diametrically opposite. He chooses the first, and rejects craniotomy so long as the child is alive. "But it will be said," he observes, "must the accoucheur fold his arms and allow both mother and child to perish, when he might, probably, save one of them? To this we answer, once more, that he cannot commit murder; that he must not do evil in the hope that good may follow; and that the medical man, like every other member of society, must be prepared to encounter in this dim world a great many calamities which he can neither remedy nor alleviate." Now I have shown that we do not commit murder. I agree fully in the rule that we are not to do evil that good may follow, but the reviewer's use of it in this place is plainly a "*petitio principii*," for I deny that we do evil, that is, morally, or involving guilt; and that "doctors have to encounter many calamities in this dim world which they can neither remedy nor alleviate," is undoubtedly true, but *is* this a case in which the doctor can shelter himself under the comfortable conclusion that "he *can* neither remedy nor alleviate it?" Is it not quite evident that his voluntarily refusing to deliver makes him an active, willing, and responsible accomplice in the death of the mother?

I have no hesitation in stating my deliberate opinion, that the second plan, which has received the sanction of the best and most distinguished men in the profession, is the right and the wise course to adopt, and the one which best adjusts and

preserves the balance of our responsibility. For, in the first place, I have proved that the destruction of a child under such circumstances is not murder, but justifiable in law. Nay, if you think a moment, one cannot say that the blame of the child's death rests upon the accoucheur at all, for that is inevitable if he do nothing. All he is justly answerable for is depriving it of life a few hours before it would otherwise cease to live. And for what? The mother is in imminent danger, and will die if assistance be withheld, but she *can be saved now.* I say, therefore, that if this assistance be not given, the accusation of murder (by omission) would come with greater force against the party who voluntarily allows the mother's life to be imperilled. Take lower ground, if you like, than the abstract question of right. Granted, if you please, that hastening the child's death is an evil: so is the death of the mother: which of the the two is the lesser evil, considering that you *cannot* prevent the first, and *can* prevent the latter?

No good man will forget that for all his deeds he is responsible to God; but for our professional actions we have the additional tribunal of professional and public opinion. Narrow the circle still further, and it is clear that each of us is specially answerable to the party who has intrusted us with the lives most dear to him. The latter has the most direct and deepest interest in both the objects of our care, and it appears to me that it is impossible to ignore *his* right to be a party to whatever decision we come to.

Suppose it to be our painful duty to announce to the husband that the labour is such that the child *cannot* be born alive, but that it must be destroyed if we hope to save the mother; nay, that if we wait until it die, the mother will only be so much the worse. Are there many husbands who would hesitate? Would not natural feeling and common sense lead him to decide that, the child's safety being impossible, the mother's safety should be secured. If this be the case, the accoucheur who refuses to act must be prepared to meet the responsibility he thus incurs towards society. Admitting fully that a man's conscience must be his guide, I do not think in a case like the present he can always be at liberty to ignore the consciences of others.

I have thus endeavoured, I hope not unsuccessfully, to define the position in which we stand as regards the mother, in cases where the child cannot be saved. I have shown that the responsibility which has ceased for the life of the child has thereby, as it were, doubled in behalf of the mother; that

quiescence on our part cannot be considered as a submission to necessity, or to the decrees of Providence; but that, whether we interfere or not, we are equally voluntary, intentional, and active agents. That in hastening the death of the child, we in no sense incur the guilt of murder, nor are we fully responsible for its death, which, with or without our interference, must have ensued; while if we, in waiting for its death, imperil the mother, we are in the fullest sense responsible for that result.

But at this point I am met by the reviewer with a quotation from my own statistics to show, that the gain to the mother is not so great after all; for that 1 in 5 die after craniotomy. No doubt this is a very large mortality; but if the reviewer had been a medical man, or if he had taken the trouble to read the next sentence in my book, he would have found it explained as in many cases the result of the doctrine he is upholding, viz., the waiting until the child is dead, and the consequent increase of peril to the mother. In many cases, doubtless, the delay is voluntary; in others it arises from ignorance on the part of the poor, so that, when assistance is procured, the patient is too far gone for ultimate safety. I should be very glad to furnish a table of cases without complication, in which the operation was performed before the patient was too far reduced; but I fear that I shall not be able to adduce many. In Dr. Collins' Life of Dr. Joseph Clarke are given the records of his private practice, and I find that he performed the operation twelve times from mechanical disproportion (including one case of hydrocephalus), and all the mothers recovered favourably; yet the reviewer specially mentions that, of the same operation performed in hospital under Dr. Joseph Clarke, 1 in 3 of the mothers died; an ample confirmation of the explanation I have given.

In Dr. Robert Lee's "Cases in Midwifery" there are eighty cases of craniotomy recorded, under similar conditions to those I have indicated, viz., mechanical disproportion without complication, although Dr. Lee was not called in many of them until too long a time had elapsed; but, even so, only 4 died, or 1 in 20. Dr. Lee's character is a sufficient guarantee that the operation was the patient's only chance, and he expressly regrets that some of them were not delivered earlier; had they been, probably none would have died.

In the record of Mr. Cross' practice there are 7 cases in which craniotomy was performed, and all the women recovered.

Dr. M'Clintock has met 5 cases in private practice in which the operation was required from disproportion, and all the mothers recovered.

In looking over my own case-book I find that I have never performed the operation in consequence of mechanical disproportion, in my own private practice; the only cases being two of excessive hemorrhage, in which, there being no doubt of the child being dead, this operation was preferred to turning; and one case of convulsions, in which the child was already dead. But in consultation I have had recourse to craniotomy in twenty cases, shortly after it became evident, either that the child was dead, or that it *could not* be born alive; of these, all the mothers recovered well. In four other cases I was called in after the labour had been so protracted that the mother's case was hopeless, and the operation did not save them; these, therefore, I exclude.

From these cases, though their number is more limited than one could wish, I think we may fairly conclude that if the operation be performed as soon as it is imperatively demanded, and before the mother is run down, it is not attended with greater danger than must always be anticipated from any great operation, for it appears that out of 124 cases, some of which were unduly prolonged, only four women died, or 1 in 31, i. e 3 per cent. Nay, more, Dr. M'Clintock showed, at a recent Meeting of this Society, that of the two modes of delivery, by the forceps, and by craniotomy, the latter, *cæteris paribus*, is the safer for the mother.

With regard to M. Debreyne's experience, quoted by the reviewer, that "it is almost always fatal to the mother," if it be more than one of the loose expressions occasionally used by writers, I can only say that it speaks volumes against M. Debreyne's practice and that advocated by the reviewer, for I have shown that the excessive mortality results from unreasonable delay.

Now let me say one word upon children with hydrocephalus. These cases come under the same law as those of which I have been speaking, i. e. the law of disproportion or of relative bulk. The reviewer declaims strongly against perforating in them, because, as he says, such children have been born alive. No doubt this is true, but the cases are few; in the greater number the child is dead, or has been necessarily destroyed. But their life or death does not determine the use of the perforator; if the head be not too large to pass through the pelvis, we should no more think of destroying the child than if it were deformed in any other way: if, on the other hand, it cannot

pass, it must be opened for the same reasons as we perform craniotomy in distorted pelvis. Probably the reviewer was not aware that such cases, when let alone, involve serious danger to the mother: yet of seventy cases collected by Dr. Keith, in sixteen there was rupture of the uterus, and death. The same result followed in five cases related by Dr. R. Lee.

So far, I have assumed that we have only a choice between the two methods of dealing with these cases: that there is no alternative but destroying the child, or allowing it to die; but the reviewer maintains that there is, and, if I understand him, that it ought in all cases to be the substitute for craniotomy. He says that "when it has been proved by *experience* and to an absolute demonstration, that a full-sized child cannot be born alive, the induction of premature labour ought undoubtedly to be adopted. The only lawful alternative is the Cæsarean section, and this itself is so formidable and dangerous, that, when it can be foreseen, and its necessity avoided by any lawful and less dangerous means, it is an undoubted duty to have recourse to them." That is, for every present impracticable labour we are to have recourse to the Cæsarean section; but for any future ones in the same woman to the induction of premature labour. I perfectly agree with the reviewer, that for all cases of obstruction for which I have recommended craniotomy, and he the Cæsarean section, premature labour ought to be advised in subsequent pregnancies, and this doctrine he found in my book, if he read it. At the same time, I cannot but congratulate the profession on finding the Dublin Review an advocate for the induction of premature labour: it is a sign of progress very encouraging to us, for the reviewer must be aware that this conservative operation was first proposed by those Protestants, upon whose alleged disregard of infantile life he is so severe; and also, that for years it was opposed in France, Italy, and Germany, by the Roman Catholic clergy. Even so late as 1827, M. Capuron, a distinguished and devout practitioner, characterized it as "Un attentat commis envers les lois divines et humaines."

Now let us consider the Cæsarean section as a substitute for craniotomy.

The reviewer bases his conclusions upon the statistics given in my book. The entire number stated is 423, of which 231 mothers were saved, and 192 lost, or about 1 in $2\frac{1}{3}$; of 238 children, 167 were saved, and 71 lost. Let me observe that, although I have collected this number, I am far from pledging myself to the trustworthiness of the persons by whom they were recorded. The incomplete account of the children also is a

great drawback, as our statistics might be altered if we knew what became of the remainder.

If we inquire a little further, we find that M. Figueira has collected 790 cases, of which 424 were fatal to the mother, or considerably more than one-half, but say 50 per cent.

Again, Dr. Arneth mentions that M. Kayser collected and analyzed 338 cases, of which 210 proved fatal to the mothers, or nearly 2 out of 3, but say 60 per cent.

Moreover, if we take the cases which have occurred in Great Britain and America alone, I find, out of 63 cases, 18 mothers were saved, and 45 lost, or nearly three-fourths, say 70 per cent. In 60 cases, where the result to the child is mentioned, 34 were saved, and 26 lost, or, 1 in $2\frac{1}{3}$.

Thus we cannot in fairness take the more favourable statistics as a ground of our proceedings: we must either strike an average, or, where that is impossible, base our calculations upon the lowest. Now, according to Figueira, we shall lose more than one-half; according to Kayser, two-thirds; and according to British and American experience, nearly three-fourths; whilst of the children we may, under similar circumstances, possibly save one-half,—I say possibly, because, as the result to many of the children was not noted, it *may* as well be less as more.

Let us go a step further. It is well known that, of late years, cases have been more carefully selected in these countries, and in many ways have been managed better by *previous preparation*, both of the patient herself, and of suitable means and appliances, which require time and foreknowledge. To show this, take the cases that occurred in Great Britain and America before 1830: 35 such cases will be found in the Table I have given, of whom 30 died and only 5 recovered, or 1 in 7: i.e. $\frac{6}{7}$ths, or 86 per cent. of the mothers were lost; more than one-half the children were saved.

So far, then, we find that a more careful analysis has not improved the mortality after this grave operation: we see that it varies from one-half to two-thirds, three-fourths, and six-sevenths of the mothers, and about one-half of the children: whilst we found that a careful examination of craniotomy reduced the mortality to 1 in 31. That is, you lose 1 mother in 31 after craniotomy, and all the children; but in the same number by the Cæsarean section, you would lose about 16, 20, 22, or 27 mothers, and save 16 children. Or, taking the lowest of these figures, and admitting for a moment the lives to be of equal value, out of 31 cases, or 62 lives, you save 30, which is exactly the number of lives that would be saved by craniotomy,

if my calculations are right. If we take the higher numbers, the saving of life will be reduced respectively to 27, 25, and 20, in 62. And, moreover, we should not forget that, whereas craniotomy is an operation of *necessity*, not election, we will have voluntarily *chosen* this operation, and have knowingly incurred this fearful destruction of mothers. To any person thus acting, the reviewer's words will cease to be ironically severe, and become simply descriptive. "And if we may sacrifice one life to save the other," he says, "if we may sacrifice the less important to save the more precious, we may, of course, occasionally kill the mother to save the child, because there are many circumstances in which the life of the latter is much more precious than that of the former."

After what I have said, I think we shall hardly be prepared to agree with the verdict of the reviewer, that if all the circumstances of both operations were compared impartially, "the advantages would remain on the side of the Cæsarean section, which is much the *easier and simpler of the two*." Let us examine a little closer into this, as bearing upon practice. One *cause* of a high rate of mortality after the Cæsarean section is, that the patients have often been allowed to remain in labour too long before the operation. One *advantage* has been—and it is essential to success—that the operator has known that he would have to operate some time previously, and has had time in some degree to prepare his patient, to secure suitable assistants, and to get ready various matters which are sure to be required. The *danger* arises, first, from the shock of the operation; second, from hemorrhage; third, and chiefly, from subsequent peritonitis, and this latter risk will be much increased by bad food, bad air, and bad nursing generally, but especially by the prevalence at the time of any epidemic.

Now, in substituting this operation for craniotomy, consider the circumstances in which we must almost necessarily be placed, and see whether they are favourable to success or not. They appear to me to combine every disadvantage of the cases of hysterotomy on record, with none of the advantages possessed by the operator in them.

In the first place, so formidable an operation will naturally be postponed to the latest possible moment, on account of its known danger, which will materially diminish the chances of both mother and child. Then, as it is quite impossible, in such cases as we have been considering, that the operator could anticipate its necessity, he will necessarily be unprovided with things requisite, and with assistants; nay, it may be night before he makes up his mind, and he may possibly be in the

country, remote from all qualified assistance. Moreover, these cases are very much more frequent among the poor than those in comfortable circumstances, and here we have combined the drawbacks of bad air, bad food, and injudicious management, with possibly a prevalent epidemic.

Under these circumstances, what will be the probable mortality? You may unhesitatingly dismiss the hope of saving one-third, or one-fourth, or even one-seventh of the mothers, and half the children; but can you, with any reasonable certainty, calculate in saving 1 in 20 of the mothers (5 per cent.), and 1 in 6 of the children; and if not, look at the unfortunate position of the accoucheur,—he has *sacrificed* so many of the mothers to save so small a proportion of the children. May we not fairly characterize this as doing evil that good, and very little good, may arise, which *we* reprobate as strongly as the reviewer.

But allow me to add that, if we are to be guided solely by the desire of delivering a living child, at whatever expense to the mother, I do not see how we can limit the operation to the cases we have supposed, viz., mechanical disproportion. There are others in which we fail in saving the child by ordinary means, where it might indubitably be born alive by means of the Cæsarean section. Take, for example, a case of prolapse of the funis, which you fail in replacing, and when turning is impracticable, and the application of the forceps impossible; the labour being natural, the mother will be delivered without risk, but the child will be dead. Now in this case, Cæsarean section would undoubtedly save the child, but *dare any one propose its adoption*? Yet the principle is the same, only pushed a little further.

The reviewer lays much mistaken stress upon the Cæsarean section being "simpler and easier," which he would not have done had his medical knowledge kept pace with his theological. In craniotomy, in the cases we have been considering, no wound or injury is inflicted upon the mother: a mutilated child is forcibly drawn through the passages, and that is all. In the Cæsarean section, on the other hand, the largest serous cavity in the body, and that by far the most sensitive to morbid action, is fully laid open, the uterus is divided, and there will be more or less hemorrhage into the peritoneum. After the operation is over, there is every probability of an attack of peritonitis from the exposure and rough contact with the serous membrane, and this disease is one of the most fatal we ever meet in practice. It must be either ignorance or folly to compare the danger of the operative proceedings of craniotomy with those of

the Cæsarean section, as regards the mother. And medical men are aware of and admit this. I know a little of foreign obstetric literature, but I cannot call to mind a single Roman Catholic writer of eminence who has recommended this substitution. I should at this moment be perfectly willing to abide by the decision of a jury of French or Austrian obstetricians of authority on this subject; and, however the question of craniotomy before the death of the child be decided, I can assure the reviewer that he will find no one in this country to take his advice about the Cæsarean section. Any one who should venture to do so would, I have little doubt, find himself put upon his defence before the tribunals of his country, and in the hands of a jury who have wives, and value them.

Allow me to add a confirmation of the opinion I have expressed, in the words of Dr. West, no mean authority, it will be admitted:—"If, then," he says, "such and so many dangers beset this operation, while the causes of that mortality are, for the most part, beyond the power either of surgical dexterity or medical skill to obviate, and some of them inseparable from those processes which needs must follow delivery, we may, I think, feel satisfied that the general rule in British midwifery which prohibits the performance of the Cæsarean section, except where delivery would otherwise be altogether impossible, rests on a far sounder foundation than that of mere prejudice, or blind obedience to the dicta of men eminent in their profession."

I have now gone pretty fully into these important questions: I have shown that hastening the death of a child that cannot be born alive is not murder, as the reviewer has been pleased to term it, but, according to the law of morals and the law of the land, justifiable and right. I have expressed my own faith in the safety of the child's soul when baptism is impossible. I have endeavoured to prove that the responsibility of the accoucheur for the child ceases when his power over it fails; but that, in the one essential particular, his responsibility for the mother does not cease, but rather augments, because that condition is within his own control. We have seen that craniotomy is not recommended for any case in which the child can be delivered alive, and that, although the mortality to the mothers is very high where assistance is deferred until the death of the child has taken place, it is comparatively small when afforded in reasonable time.

As to the alternative of the Cæsarean section, I hope I have convinced you that, whatever be its mortality, when deliberately

planned and arranged beforehand, with assistants and all the various appliances necessary, yet that, hurriedly performed, with the patient exhausted by prolonged sufferings, and the operator deprived of the advantages of due preparation, the mortality must inevitably be so fearfully high, whilst the number of children saved would be so small, that were we prepared, as the reviewer is, to sacrifice so many mothers in our endeavour to save the children, the sum total of lives saved would, at the best, not be more, but might very probably be much less than by the operation of craniotomy.

There are two or three other points of secondary importance upon which I should like to say a few words, if I have not exhausted your patience. The reviewer states that I mention, as one of the objects of the Cæsarean section, "the extraction of the child so promptly as to give it a chance of life, when the death of the mother has taken place suddenly;" and he adds, in a tone of blame,—"But he never again reverts to the subject, so far as we have been able to discover: and, indeed, the teaching of professors of midwifery in these countries has led to the horrible practice of leaving the living child in the womb of its dead mother. *A great many cases have fallen within our own observation* in which the woman has reached the end of her pregnancy, where the death was sudden, and it was morally certain that the child was alive, and yet it was left in the dead mother's womb, and buried remorselessly along with her."

The quotation from my work proves, on his own showing, that the allegation against the teachers of midwifery does not apply to all; and, from what I know of my fellow professors, I do not think that it is true of any. I believe most firmly that far less than being "*morally certain* that the child was alive" would induce every teacher and practitioner to give the child the chance of life: and I regret to see in the pages of the Dublin Review what I cannot but believe to be an unfounded slander.

But the reviewer has seen "a great many" such cases of sudden death, &c. Now as he has had free use of my statistics, I call upon him to give me the benefit of his, and to say *how many* he has seen, and *under what circumstances.* I am unwilling to say an uncourteous word of any one, but I must frankly confess that I do not believe this assertion. Sudden deaths at the end of pregnancy, or in the last two months, are very rare; the majority result from accidents, hemorrhage, rupture of the uterus, cerebral affections, or acute disease affecting other organs. Dr. M'Clintock informs me that in the

seven years he has been Assistant and Master in this Hospital, he has seen but two cases of death during pregnancy.

I myself have seen two or three women (in consultation or dispensary practice) die undelivered from hemorrhage, and two from rupture of the uterus, but no others, in twenty-six years' practice. Now, in the two latter classes of cases, the operation would be useless, for hemorrhage sufficient to kill the mother would undoubtedly destroy the child; and Dr. M'Clintock has established the fact that the child dies almost instantly after rupture has occurred. I never saw a woman die of convulsions or apoplexy before delivery; but we know that in such cases, when the life of the mother is preserved, the child is often born dead, and I think it very unlikely that it would survive the mother's death. At any rate, the stethoscope would test this, as well as in death from acute diseases; and if the fœtal heart were heard, I think it would be the duty of the medical man to propose the operation; it is clear that the decision does not rest with him. In case of accidental death from violence, I believe every one is prepared to try and save the child, and the probabilities are much more in its favour than in any of the other cases, yet the reviewer ought to know, that of all the cases of this kind on record, in a large majority the child has been found dead.

I cannot help remarking here that, not only in what relates to this question, but to all those he touches upon, the reviewer altogether ignores the husband and father, as necessary to be consulted, or having a voice in the decision. Whether the child is to be destroyed, or whether we are to wait until it dies to the peril of the mother, or whether she is to be opened the moment she is dead, is to be decided by the clergyman or the doctor, but apparently without reference to the person most deeply interested! And yet he has not only the natural right of his relationship, but legal power: for Dr. Lever recently mentioned that he had consulted Dr. Alfred Taylor to know "whether he would be justified in performing the operation without the consent of the father, as it appeared unjustifiable homicide to allow the infant to die?" Dr. Alfred Taylor gave his opinion that, in law, the infant belonged to the father,—the infant, "with the life thereof;" and that if Dr. Lever touched it, even to rescue it from death, an action would lie against him. The father in two cases had refused Dr. Lever permission; and in this country although there is a strong feeling against burying the child in the womb of its mother (a distortion, probably, of the true view), yet I have known permission to extract it refused until it was alto-

gether too late. I confess that, although wrong, one can make much allowance for the feeling which objects to the mutilation (as it would appear) of a wife, instantly after death, and in fact before the husband had been able to realize his loss.

The "moral certainty" of the reviewer seems to me very easily acquired, if he believes all the stories he quotes from M. Debreyne of children delivered alive by the Cæsarean section, after five, twenty-four, forty-eight hours, and three days, or even after the interment of the mother. It would take us too long to examine into the evidence of such miraculous cases, and I, for one, object to take them on M. Debreyne's authority. The reviewer does not tell us the date of his book, and I confess I have not met with it. The position he holds seems equally indefinite; he is "Professeur particulier de Médecine pratique, Prêtre, &c.," whatever that may mean; but it would require a very weighty "Professeur particulier" to justify the demands he makes upon our credulity.

Again, the reviewer "reprobates in the strongest terms the language of Dr. Churchill, who confounds the induction of premature labour with the procuring of abortion." Begging the critic's pardon, I do no such thing; I couple the two together, certainly, but they were obviously intended to apply to different cases. If, when the reviewer was so shocked with the paragraph in the chapter on Cæsarean section which he quotes, he had turned to the chapter on induction of premature labour, where the details are given, he would have read thus:—"In the cases I have supposed, the safety of the child is the great object of the operation: and they are limited, therefore, to those patients in whom the pelvis, though deformed, is still large enough to permit the passage of a *viable* child. But there are cases where the *distortion is so great as to render the passage of a seven months' child impossible*, and others still worse, *where no reduction of the child's bulk will enable it to pass*. I do not see why abortion should not be induced at an early period in such cases. The life of the child must inevitably be sacrificed, and the safety of the mother alone regarded; and surely, after the calculations I have adduced, it cannot be pretended that Cæsarean section, the *alternative* in these cases, offers such a chance to mother and child as would justify our preferring it." I am sorry that the reviewer should have wasted so much virtuous indignation, but it is his own fault. I did not, and do not, propose the induction of abortion as a substitute for premature labour, but in cases in which premature labour, when the child is viable, would be of no use. In those very rare cases of extreme distortion, or after the patient has re-

covered from the Cæsarean section, performed for extreme distortion; I do say that, to save the mother from the excessive risk of the latter operation by one from which she runs no risk, would be more justifiable and better practice than to allow her to go to the full term. The reasons I have already so fully given apply equally to these cases, so that I need not enter into them again. I do not believe that we endanger the soul of the child; and I have no doubt that the mother's safety will be more fully insured than by any other mode of treatment.

I fear that I have exhausted the patience of the Society, but as the question has been brought forward with great show of authority, I felt that I should be in some sort shrinking from a duty which I, as Professor, owe to the junior members of the profession, if I did not state fully and freely the grounds on which I and others dissent from the conclusions of the Dublin Reviewer, and the reasons for the practice which I and others have recommended.

Art. II.—*A Case in which it was found necessary to tie the Femoral Artery for the control of Hemorrhage occurring during Amputation of the Leg.* By S. Henry Hobart, A. B., M. B. T. C. D., M. R. C. S. E., Medical Officer, Cork Dispensary.

In November, 1856, Mr. M'C., while superintending the working of a threshing machine, had his leg caught in some of the wheels, in consequence of which he sustained a severe compound comminuted fracture of the right leg. The fracture extended into the ankle-joint, and so severe was the injury that my father, who saw the case next day, strongly urged the necessity of primary amputation, but this the patient would not submit to. He was called to see the case again after some weeks, when diffuse inflammation had set in: the entire limb was enormously swollen up to the groin, being hard, and pitting on pressure. Extensive suppuration supervened in the leg, but no abscess was formed in the thigh; by-and-by the swelling in the thigh began gradually to abate, and even the leg took on a more healthy action. After a long struggle, and being on several occasions reduced almost to death's door from exhaustion and suffering, he at length came to Cork, September 10, 1857, for the purpose of submitting to amputation.

A probe can now be passed into the ankle-joint through several sinuses, and strikes against denuded bone; none of the

sinuses extend upward into the soft parts of the leg; there is a cicatrix of an incision along the line of the fibula, where an extensive abscess had been freely laid open, reaching almost to the knee, about which a good deal of hardness exists, there is no trace of suppuration going on in the calf, but, on the contrary, all disease seems now limited to the ankle-joint, which, however, is hopelessly disorganized: the man's general health is excellent. Accordingly, on the 18th of September, my father proceeded to operate. In cases where he has amputated the lower extremity, for some years past I have been in the habit of compressing the femoral artery with the thumb where that vessel passes out over the pubis; in this case, however, I found there was so much thickening of the areolar tissue, the result of the former diffuse inflammation, that it was impossible to command it with sufficient certainty; a tourniquet was accordingly applied over the middle third of the thigh; a firmly rolled bandage, which we have always found preferable to the ordinary pad of the tourniquet, was placed across the vessel, over Hunter's canal, and the instrument was left loose until after the incision through the integuments, so as not to induce congestion of the veins. On making this incision, however, and dissecting up the integuments, the amount of venous hemorrhage was extremely great. The pad being now carefully adjusted, the tourniquet was firmly secured, and a circular incision carried through the muscles. In cutting through these it was evident that they had, in some places, undergone considerable changes, being hardened in structure, so as to resemble that of a fibro-cartilaginous substance. The gushes of arterial blood from all parts of the wound were very severe, indeed the tourniquet appeared to have no command whatever over it: on examining the position of the pad, it was found to be excellent, and a strong man, being directed to tighten the screw, was unable to give it more than a slight turn, and that without any advantage. Meanwhile, I followed the knife with my hand, compressing the cut surface so as to control the hemorrhage: the catlin was then passed into the interosseous space, when a gush of blood took place, far more severe than all the others combined. This, however, was also temporarily checked by a finger being pressed over the bleeding vessel; a retractor being now applied, the bones were quickly sawn through, and both hands being again applied, kept the bleeding somewhat in check. On lifting one finger at a time, the bleeding vessels were brought into view, and my father proceeded to tie them; but so soft was their tissue, as also that in which they were imbedded, that if even a slight degree

of traction was applied to the tenaculum, it immediately tore away, and this was followed by an increase of hemorrhage. By care and patience several vessels were now secured, though some of those which appeared to have been sound would again bleed, as if the ligature had been disturbed by some spasmodic twitching of the muscles in its immediate vicinity, and meanwhile a very large quantity of blood was lost. On attempting, however, to secure the interosseous artery, the hemorrhage became seriously alarming; two or three attempts were made to take up what appeared to be the bleeding orifice, but no hold could be taken of it by the tenaculum, as it tore through the tissue as easily as through a mere clot of blood. My father now endeavoured, by grasping a large mass, to obtain some hold, but on tying the ligature it immediately cut through with scarcely any resistance, while at the same moment the hemorrhage became much more violent than ever. On now pressing my finger on the point from which the blood issued, it passed, with very little resistance, to the extent of two inches into the interosseous space, and by keeping it there, and compressing the face of the stump with both hands, I was enabled to hold the hemorrhage in tolerable check.

My father now determined to tie the femoral artery, and, with the assistance of Dr. Bullen, who came in at this stage of the case, he proceeded to cut down to that vessel in Scarpa's space; fortunately the vessel was immediately found, but some difficulty was experienced in passing the ligature round it, in consequence of the dense nature of the areolar tissue of the thigh; five minutes, however, in all, were scarcely occupied in this operation, and it was gratifying to find that the hemorrhage was perfectly restrained. The man had meanwhile suffered terribly from the loss, and, though previously a strong plethoric person, he was now completely blanched, and complained of that horrible sense of prostration so characteristic of severe loss of blood. After allowing the man to remain on the table for upwards of an hour, and administering stimulants with a liberal hand, it was thought safe to remove him to bed. He was accordingly raised by four men, and, being carefully kept in the recumbent position, was carried thus into the next room and laid on the bed; but though this was done with the utmost caution, he was no sooner laid on the bed than he fell into a profound state of syncope, and it was only by frequent dashes of water on the face and chest that he was eventually roused. His condition was now most precarious, but by the liberal use of opium, wine, and broth, he quickly rallied.

19th. Wonderfully well. The limb or stump, which has

been enveloped in flannel, is natural in temperature: the patient had a good deal of sleep during the night, and now complains of no pain or uneasiness; to continue the opium, &c.

20th. Doing well; no new feature in the case. 10 o'clock P. M., a sort of tremor, not amounting to a rigor, occurred.

21st. Looks well and cheerful. On removing the suture by which the wound in the thigh had been closed, a small quantity of dark-coloured pus escaped

22nd. Stump dressed to-day; the entire surface is suppurating freely, and is quite red and vascular, with no appearance of slough. It should be mentioned that no attempt was made to obtain union by the first intention in the stump, as the inelastic nature of the soft parts rendered it impossible to bring them together.

23rd. A large discharge of ill-coloured pus from the wound in the thigh; bowels constipated; to have aperient mixture.

24th. Stump dressed, looks well; granulations springing up everywhere, even on the surface of the bones; discharge from thigh as yesterday.

25th. The discharge from the thigh is now quite healthy; there is an abscess apparently within the sheath of the sartorius as it evidently follows the course of that muscle both upwards and downwards.

27th. The ligature came away to-day; a slight tinge of blood followed in the discharge; stump granulating luxuriantly, and has all through shown a high degree of vascularity.

28th. 5 o'clock A. M., severe arterial hemorrhage occurred; on my father's arrival he found the blood still escaping, but not as freely as it had done, and on applying a cloth wet with cold water it completely ceased, when further interference was postponed; the quantity of blood lost at this time was about six ounces. 1 o'clock, P. M., just before the hour for meeting at the patient's house, a return of the hemorrhage occurred, but this was small in quantity, and did not continue.

These gushes of arterial blood caused no small fear that, though the ligature had cut through the femoral, that vessel might not have been perfectly united, and that it might have been the source of the hemorrhage. On consultation, however, it was argued that if the blood came from so large a vessel, it would scarcely be so easily restrained, the wound being merely covered by a bit of lint spread with Turner's cerate, and this retained in its position by small strips of adhesive plaster; while, on the other hand, the fact of an extensive abscess existing rendered it possible that the blood might have another source, namely, the rupture of some small vessels

into the sac, and the circumstance of the abscess being situated within the sartorius rendered it more likely that hemorrhage might occur, as one of the muscular arteries, even if not hypertrophied (which it probably would be in the present case) would be quite capable, if lacerated or laid open by ulceration, of affording the amount of blood which had as yet been lost: the case was accordingly closely watched, so that if the hemorrhage became alarming and proved to be from the femoral, the external iliac might be tied; and meanwhile the dressings were not removed, for fear of inducing a return of it.

29th. No return of hemorrhage; but a discharge of seropurulent fluid has been escaping during the night.

30th. No hemorrhage since. Dressings removed; a great quantity of pus mixed with clots of blood was evacuated; this amounted to about 12 or 14 ounces, but no fresh hemorrhage occurred. It was now quite obvious that the idea suggested at the consultation was perfectly correct, and that the blood came from some small vessel within the abscess, for the orifice of the abscess and that from which the ligature had come away were quite distinct, though not more than a quarter of an inch asunder, while all the blood was observed to escape from the orifice of the abscess, and to be mixed up with the pus, while from the track of the ligature a mere drop of healthy pus escaped, which was not even tinged with blood. The abscess being now evacuated, a many-tailed bandage was applied about the thigh, which afforded much comfort to the patient.

October 1st. The abscess did not contain more than about three ounces of matter to-day, but this was pretty deeply stained with blood.

2nd. About one ounce of pus to-day, slightly tinged.

3rd. The quantity of discharge still less to-day.

7th. Owing to the manner in which the amputation had to be concluded, in consequence of the hemorrhage, and the fact that the soft parts did not readily retract at the time, the bones were found to have been rather long, and it was now necessary to remove portions of them; the abundant hemorrhage from the slight wounds necessarily inflicted on the soft parts proved their high degree of vascularity.

9th. No discharge from the thigh since the 7th, when it was very slight. Stump healing.

From this date everything went on favourably, and in November the patient returned home, with the stump all but healed. The principal points worthy of further comment in this case appear to be the profuse hemorrhage occurring dur-

ing the operation, and the effect of the tying of the femoral artery on the reparative process in the stump. The result of the form of diffuse inflammation was, no doubt, the principal cause of the hemorrhage, for I have already mentioned that the femoral artery could not be commanded in the groin, owing to the dense and thickened state of the areolar tissue; and the same condition existed throughout the entire thigh, and must have been the cause of the tourniquet failing to compress the artery; that the same condition existed in the leg also, as in the thigh, and that this inelastic, unyielding state of the tissue caused the tenaculum and the ligature so easily to tear through them, I have no doubt; although the leg, on being examined a day or two before the operation, communicated the idea of being in a tolerably healthy state; but this was probably caused by the fact that the patient had been assiduously rubbing the limb with a liniment, and, while not employed in this way, he had it carefully and firmly bandaged. That the bandaging had the effect of giving a soft, healthy feel to the limb, by causing absorption of at least the serous effusion, was subsequently proved by the application of the many-tailed bandage to the thigh, as in a few days it almost completely removed the hardness previously existing, and the limb, which had until then been of much larger diameter than the other, was, with equal quickness, reduced to a much smaller size.

The satisfactory process of healing was also very remarkable under the circumstances, which were peculiarly unpromising. Thus we had, first, the general circulation reduced to the lowest possible standard at which life could be sustained. 2nd. A limb in a decidedly unhealthy state from the result of old inflammation. 3rd. This was now deprived of its proper share of this scanty supply of blood, by the tying of its main artery, while the languid condition of the circulation must have rendered it less capable of dilating the collateral vessels. And, 4th, in this state, two formidable injuries, that on the face of the stump and that over the femoral artery, had to be repaired, whereas for this very reparative process a much larger supply of blood must be necessary, than for the maintenance of an uninjured part. Under these circumstances everything prognosticated the high probability of gangrene setting in, but yet, on the third day, when the stump was dressed, the entire surface presented a highly vascular condition, discharging a fair quantity of healthy pus; nor do I remember ever to have seen a wound in which more healthy granulations sprang up, or in which, altogether, a more vigorous process of repair was carried on.

Art. III.—*On the Spider's Web, as a Tonic and Febrifuge.* By J. Harvey, M. D.

The web of the spider is pretty generally known as an external vulnerary, acting—as most persons would probably think—merely mechanically (as the fur of a hat does) when applied to a cut or a wound; but the use of the web *in*ternally is comparatively little known in these islands, although mentioned in some old medical authors, and with encomiums. These encomiums, however, were so loosely and indiscriminately given to a variety of remedies or agents, as not unfrequently to excite ridicule on the part of some persons; and, on the part of others, doubt and neglect.

The spider and its web are mentioned as of considerable medical efficacy in a very elaborate Dispensatory[a] of the late Dr. James[b], first proprietor, not (as some state) the real inventor, of the celebrated antimonial powders which are still sold under his name. But a more modern author, and one more to be relied on, Dr. Robert Jackson, has given a striking and bold testimony to the value of the spider's web, when exhibited in some cases of ague, and in certain stages or states of typhus fever, &c.

The late Dr. Robert Jackson was connected with the British army for about half a century, was known as an active and able inspector of military hospitals, and held for many years the situation of chief of the medical department of the army in the West Indies. He has given the results of his observations and experience in different valuable works. In his work on Fevers he thus alludes to the exhibition, as a remedy, of the spider's web:—

"I think I may venture to say, that the cobweb prevents the recurrence of febrile paroxysms more abruptly, and more effectually, than bark or arsenic, or any other remedy employed for that purpose with which I am acquainted. The cobweb [however] was rarely given before the subject was prepared by bleeding, emetics, or purgatives; and given to a subject *so* prepared, it seldom failed to effect a cure comparatively permanent: relapse, or conversion into another form of disease, being, upon the whole, a rare occurrence where the disease had been suspended by this remedy. If it was not given until the paroxysm was advanced in progress, the symptoms of irritation, viz., tremors, startings, spasms, and delirium, if such existed, as symptoms of febrile action, were

[a] The New English Dispensatory. [b] Ob. 1776.

usually reduced in violence; sometimes entirely removed. In this case, sleep, calm and refreshing, usually followed the sudden and perfect removal of pain and irritation. Vomiting, spasms, and twisting in the bowels, were also usually allayed by it: there was no effect from it where the vomiting or pain was connected with real inflammation or progress to disorganization. In cases of febrile depression, deficient animation, and indifference to surrounding objects, the exhibition of eight or ten grains of cobweb was often followed by exhilaration; the eye sparkled; the countenance assumed a temporary animation; and, though the course of the disease might not be changed, or the danger averted, more respite was obtained from a pill of cobweb than what arises from or belongs to the action of wine, opium, or anything else within my knowledge."

Having alluded to Dr. James and his Dispensatory, I may proceed to give *his* statements, which seem, in part, well founded; while a portion may well be rejected as fabulous. The more sober matter runs thus:—"The country people have a tradition, that a small quantity of spider's web given about an hour before the fit of an ague, and repeated immediately before it, is effectual in curing that troublesome, and sometimes obstinate distemper. This remedy is not confined to our own country, for I am well informed that the Indians about North Carolina have great dependence on this remedy for agues, to which they are much subject; and I am acquainted with a gentleman long resident in those parts, who assures me he was himself cured by it of that distemper. And, indeed, experience confirms the efficacy of this medicine in the case of agues."

Some authors have thought that the *black* spider and its web are more to be regarded for efficacy than other kinds, and do not omit to note, viz., "which may be found in cellars, barns, and stables." However, it is in the account of the *common* spider (not in the account of the black spider), that Dr. James gives the above information, while, under the paragraph *Araneus niger*, or black spider, he thus writes:—"This spider is common in woods, thickets, and pastures. Among the approved remedies of Sir Matthew Lister, I find that the distilled water of black spiders is an excellent cure for wounds, and that this was one of the choice secrets of Sir Walter Raleigh." Many will, doubtless, receive even this with some hesitation, but it is more likely to have *some* foundation than the following quotation, taken from the article on the common spider in the same Dispensatory:—"The common spider is said to avert the paroxysms of fevers, if it be applied to the

pulse of the wrist, or the temples; but is peculiarly recommended against a quartan, being enclosed in the shell of a hazel nut."

I presume by the words "*enclosed in*" was meant, covered by—held to the place by means of—a hazel nut. These are curious statements, and may well elicit the well-known words of Shakespeare, in "Hamlet:"—

> "There are more things in heaven and earth, Horatio,
> Than are dreamt of in your philosophy."

However, there is authority enough to challenge further investigation. Eberle, the American physician, if I recollect rightly, in some of his medical writings seems to have confidence in the influence of the spider's web on the nervous system. And again, I may allude to Dr. Robert Jackson, where he intimates the remarkably tranquillizing effects of spider's web in a case of desperate asthma. The dose in *this* case was 20 grains at bed-time; but the general dose is from 5 to 20 grains, once, twice, or thrice, daily.

Art. III.—*The State of the Medical Profession in Turkey.* Part II. By R. F. Foote, M.D., Constantinople; Member of the Imperial Medical Society of Constantinople; lately 2nd Class Staff Surgeon, Her Majesty's Service, attached to the Army of his Highness Omar Pasha, serving in Anatolia, Roumelia, and the Crimea, during the Russian War 1855–56; formerly Physician to the Norfolk County Hospital for the Insane, &c., &c.

(*Continued from* vol. xxv. p. 66.)

The regulations of Turkish military hospitals as to diet were, that each patient, when admitted, should receive such as the physician under whose care he was placed thought fit, and that, when he recovered, he should be placed upon full diet during three days, and then discharged as cured, so that if it appeared to the medical officer, on the admission of a patient, that full diet was absolutely necessary, he dare not order it unless he ran the risk of incurring censure from the Hakim Bashy, or Chief Physician. On the other hand, if he demanded a consultation on the case, he might be certain that the result would be settled according to the opinion of the director of the hospital, who felt that the lower the diet was, the cheaper the institution would be conducted, and the larger number of patients he would have supported at a cheaper cost. And in a country where fatalism influences every act of the

superior or governing part of the population, it gave a ready and often subtile pretence to the subordinates for neglect in complying with the special orders of the physician.

However, much unpleasantness arose between ourselves and Saleh Bey upon this subject, who considered that whilst soldiers were ill, they could, under no circumstances, have full diet and ordinary clothing, so that patients were often obliged to remain many weeks at the tent hospital, dressed only in the thin cotton shirt and drawers, with the long dressing-gown, the ordinary hospital dress. Several cases of bronchitis and diarrhœa, I believe, occurred in consequence, and daily disputes arose as to the quantity of rations supplied.

I was told, when I first went to Varna, that the following were the rations for patients in the hospital; that I was at liberty to order any article of diet I thought proper, with the exception of wine, beer, and spirits; and that my orders would be punctually obeyed; but I soon found that if I demanded any extra, some other article was subtracted from the rations, and had I required anything which could not be obtained from the farm of the manager, something else was substituted for it.

The daily supply was—

	Bread.	Rice.	Meat.	Grease.
Low diet, . .	4 oz.	$5\frac{1}{2}$ oz.	1 oz.	
Half diet, . .	$11\frac{1}{2}$ oz.	$9\frac{1}{2}$ oz.	$5\frac{1}{2}$ oz.	1 oz.
Full diet, . .	$22\frac{1}{2}$ oz.	$10\frac{1}{2}$ oz.	11 oz.	1 oz.

The rice and meat were made into soup, and the bread given in the ordinary state.

For each patient a certain allowance of olive oil was issued for supplying light during the night, but if it were necessary to place two patients in a room capable of holding ten men, from the existence of any contagious disease, &c., no Turkish rule could be found to meet the peculiar case. There being two men in the ward, the allowance was one drachm for each man; no more could be obtained or given unless by special reference to the head-quarters at Eupatoria to the Hakim Bashy there. By the time that a communication had been made, the patients might be dead and buried; and on receiving the answer, it would most certainly be "bacalum." If the question were still persevered in, after two, three, or four months the matter would be referred to the Medical School at Constantinople, which would reply, after several months' continued letters of application—many evasive replies being sent, &c.—"bacalum." In a few months the matter would be settled. The Hakim Bashy at Eupatoria would be summoned to appear at

Constantinople to give his opinion. He would, perhaps, after further delay, think it convenient to visit the sublime city, when he would find that the members forming this "august assembly" were taking their "kief" on the banks of the Bosphorus during the vacation. The Hakim Bashy must remain for several weeks at least away from his duties, until this question could be discussed. In the meantime, hundreds of men might have been dying from neglect, or from want of the provision demanded.

In speaking of olive oil for light, let it not be understood that this was the only anomalous point in the regulations which struck me; there were others, of greater importance. The supplying of extras in addition to the half diet, the substitution of various articles of food, such as "pilaff," "mahhaléby," various vegetables, &c., were only obtained by absolute demand and after repeated contests.

A regulation existed at the military hospitals that each patient on his admission should receive a bath; that his clothes should be packed up; his money taken care of by the "boulikemeny," or clerk of the hospital; and should the unfortunate patient die, the money and other valuables become, as a rule, the property of the "Mire Alli," or colonel of the regiment.

Although the general idea is, that Turkish baths are highly beneficial in their effect upon the human constitution, I am obliged to confess that on many occasions I have seen very evil consequences arising from the relaxing effect produced by them, and I question whether we may not attribute the premature shrivelling and appearance of decay of the Turks to the improper use of the vapour bath.

I have repeatedly seen patients die immediately on their leaving the bath-room, and it was found necessary to interdict the indiscriminate use of the Turkish bath to patients on their admission.

For a full account of the baths at Constantinople I must refer to an excellent account lately published in the "Presse Médicale d'Orient," written by Dr. Milingen, and shall content myself with giving a general description of the bath from "Constantinople of To-day," by Theophile Gantier, translated from the French by Robert Howe Gould, Esq., M.A., because the general description which he gives not only applies to Constantinople, but to nearly all the towns in Turkey which I visited on the Black Sea. He says:—

In the Orient, where cleanliness of person is among the first obligations of religion, the baths have preserved all the luxury of both the Grecian and the Roman periods, and are

superb edifices of the loftiest architectural pretensions, with cupolas, domes, and columns, enriched with marble and alabaster, and displaying great varieties of colour and design, while they are thronged with armies of attendants, whose various offices recall the ancient time already named, and carry us back, in imagination, to Rome and Byzantium.

A large hall opening upon the street—the doorway of which is closed only by a piece of tapestry—receives the visitor on his entrance. Near this doorway, the master of the bath is seated, having on one side the till, into which he drops the money received as the price of the bath, and on the other a sort of chest, in which he deposits the watches, money, and other articles of value left with him by the bathers on their entrance.

Around this hall, at a temperature nearly the same as exists externally, run two raised galleries, supplied with camp beds; in its centre gushes a fountain, whose spray floats in the air or sparkles upon the marble floor.

Around this fountain are ranged pots of basil, mint, and other odoriferous plants, of which the Turks are so particularly fond.

Cloths of white, blue, or parti-color hang upon cords or are pendant from the ceiling, recalling the flags and banners in the arches of Westminster or the Invalides.

In the beds, smoking, sipping coffee, drinking sherbet, or sleeping, wrapped to the chin, the bathers, that is, those who have bathed, await the moment when perspiration shall have ceased sufficiently to permit them to dress. I was made to ascend to the second gallery by a little wooden staircase, and a bed pointed out to me; and so soon as I was disincumbered of my clothing, two tellaks twisted a white napkin around my head in the form of a turban, and enwrapped me, from the waist to the ankle, in a piece of calico, like the drapery of the Egyptian statues.

At the foot of the stairs I found a pair of gigantic wooden shoes, into which I stuck my feet, and thus equipped and mounted, I was half led and half supported by the tellaks into the second apartment, where a somewhat more elevated temperature is maintained. Here I was left for a short time to habituate myself to the atmosphere, and be prepared in some degree for the heat of the third chamber, in which the temperature is raised to 125° or 130° of Fahrenheit.

These baths differ very much from our "vapour baths." A fire burns continually beneath their slabs of marble, and the water, which is spread above them, is volatilized in clouds of

white steam, instead of issuing from a boiler in jets. These are, in a manner, air-baths, and the extreme heat induces the most profuse perspiration.

Under a sort of cupola, lighted by large panes of a greenish glass, and admitting but a vague and doubtful light, were disposed some seven or eight marble slabs—resembling tombs in form—to receive the persons of the bathers, who, extended like corpses on a dissecting-table, submit to the first process of a Turkish bath, which consists in being lightly pinched, and not so lightly rubbed and kneaded, until their persons are covered with a dew of perspiration, like that which forms outside a bottle of champagne when placed in ice.

When the pores are thus opened, and the whole frame streaming with perspiration, the bather is raised by the attendants, made to assume again his wooden shoes—without which the feet would be blistered by contact with the heated floor—and conducted into one of the niches which abound in the wall of the rotundo that forms the bathing-room.

A fountain of white marble, from which are drawn at pleasure jets of either cold or hot water, occupies each of these niches. The tellak makes the bather sit near the basin, arms his hand with gauntlet of camel-skin, and begins to "curry," first the arms, then the legs, afterwards the body, with a merciless severity, which almost draws blood, but inflicts no actual excoriation or injury.

Then from the fountain he dashes over his patient several basins of warm water, and having allowed this to partially dry, seizes him again and "polishes him off" with the naked hand, causing gray rolls to peel from the skin, in a manner astounding to a European convinced of the cleanliness of his own person.

This process is followed by a new deluge, and then by a fresh scrubbing, with tufts of hemp streaming with soap-suds. Then the tellak separates the hair, and scrubs the skin of the head; and then follows a cataract of fresh water, to prevent any determination of blood to the head, in consequence of the heat and the friction.

My tellak was a young Macedonian—perhaps of fifteen or sixteen years of age—whose skin, softened by constant immersion, had acquired a brownish tint and a fineness of polish almost inconceivable; he had no flesh left, nothing but muscle, but no lack of strength for all that.

These various ceremonies terminated, I was enwrapped in dry linen and conducted to my bed, where two youths "kneaded" me once more. I lay there for about an hour, in

a drowsy reverie, taking coffee and iced lemonade; and when I at length rose and went forth, I felt so light, so supple, so relieved from all sense of fatigue, that I appeared to be walking on air.

Having spoken of the general state of the Turkish soldiers, I must refer for further information, as to their hygienic condition, to the work of my friend and former colleague, Mr. Radcliffe, which has come into my hands since the publication of the preceding part of this article, entitled, "The Hygiene of the Turkish Army," which contains, I consider, a very able and truthful account.

I shall now proceed to consider—

1stly. The predisposing causes of the diseases which presented themselves.

2ndly. The diseases which came under my especial notice.

3rdly. The treatment found most beneficial.

4thly. The results derived, and cures effected.

The predisposing causes of the diseases which produced so great a havoc among the Turkish troops encamped at Eupatoria, in the spring and summer of 1856, must be ascribed—

1st. To the topographical situation of Eupatoria.

2ndly. To the climatic influence and the water.

3rdly. To the absence of any hygienic arrangements either within the hospital or town of Eupatoria.

4thly. To the peculiarity of the medical treatment, generally being antiphlogistic.

5thly. The placing together a great number of cases in ill-ventilated rooms.

6thly. The absence of charcoal, chloride of lime, chloride of zinc, or other disinfectants, acting as antiseptics.

7thly. The habits of the soldiers themselves, oftentimes covered with vermin, and the condition of their clothes, which were packed up and deposited in some parts of the barracks at Eupatoria for them, when recovery took place.

In considering these several questions, I deem that I shall be as fully carrying out my mission as if I were endeavouring to snatch from the claws of death several well-marked cases of pneumonia, typhus fever, or cholera.

For when we find it is calculated that 100,000 persons die annually in England alone from preventible diseases, the detailing such facts as I have gathered will be, I believe, furthering the proper object.

I joined the British Medical Staff of the Ottoman army in February, 1855, and soon after left for Eupatoria.

Having remained a short time in Constantinople, I soon learnt the truly eastern maxims—"Put off until to-morrow that which you can do to-day," "Never do that which you promise," or, as a friend of mine gives it—"Punctuality is the thief of time; procrastination, the soul of business."

I had visited the various important places in Pera, Stamboul, and Galatea, and discovered that the level, square, and plomb produced but little effect upon the mental or physical condition of the population; and, whatever the inhabitants might be in practice, they had very little of the characters of true masters of any mechanical art.

They knew how to carry heavy loads, it was true, but how to bring the rude matter into form, appeared their deficiency.

After quitting Constantinople, we arrived shortly at Balaklava, and soon after at Eupatoria, where our expected labours were to commence.

The town appeared to our view about the size of Yarmouth from the sea, the coast quite flat and sandy, and some thirty or forty vessels were lying at half a mile distance from the shore. From the eastern to the western point a distinct bay is formed; at the latter extremity was the wreck of the "Henri IV.," a French man-of-war, and between it and the other point no less than ten wrecks of vessels driven on shore during the late gale. Near the sea-shore there were several public buildings, including a Greek church, a Mohammedan mosque, two or three minarets, a large building having many pillars supporting the first floor, other public edifices of good form, with one or two small wooden piers. On a close examination I found the houses generally constructed of wood.

The Turkish soldier, drawn by conscription from some remote corner of the empire, comes to Constantinople quite a novice, and when living in peace he enjoys a tolerably idle life; he is made acquainted with his drill; no efforts are made to teach him his own language, &c., but he is made efficient to do duty in some garrison town of the empire; he receives his food and clothing with tolerable regularity, but when war comes he is oftentimes obliged to submit to great privations, and although he has bread, meat, &c., named in his rations in sufficient quantities, yet, if he gets hard brown biscuits, he must be satisfied. His pay is about twenty piastres per month, which enables him to buy tobacco in small quantities: it is equivalent to our three shillings. It often happens that the

soldiers do not receive any pay for six, twelve, and even eighteen months, but, living among the Christians, who are subject to them, they readily find some method of receiving occasional "bakshish."

Although I have hitherto spoken of the Turkish soldiers as being brought from some part of the empire, I must premise that it is understood all soldiers are Mussulmans, and so great is the fear which the Christians have of military service, that they would rather make any sacrifice than be subjected to military duties; but, in addition to the Turks themselves, during the late war several thousands of Arabs were sent by the Pasha of Egypt; also several regiments from the Bey of Tunis; the latter soldiers excited the detestation of the Turks, apparently, more than the Christians, French or English. Their religion being Mohammedan, there was a rivalry of interest and feeling. The large number of ophthalmic cases, chiefly chronic, were found among the Arabs, who are certainly as a rule less cleanly in their habits than the Turks, but, when necessity calls, make excellent soldiers. Their language is altogether different, being most guttural and harsh to the ear. Their inferior medical officers were of the same stamp as the Turkish, but, as a general rule, more intelligent. One of the surgeons, landing at Sinope from Bataim, offered himself to me as servant; he had been previously an Italian refugee, and had left the Tunitian service on account of the difficulty he found to obtain his pay; he had served in a pharmacy in Italy, and knew how to bleed, prepare medicine, &c., but was quite ignorant of any branch of anatomy or surgery.

When stationed during peace at various country districts, the Turkish soldier is enabled to indulge in a large amount of vegetable diet, and when war deprives him of his natural food, it preys severely on his constitution; and thus I think it hardly tenable that the diet of the Turkish soldier is so excellent for every campaign, for, accustomed as he is during peace to live upon a large proportion of vegetable food, when placed in a position to prevent this being supplied, scurvy makes sad havoc.

Certainly the domestic economy of a Turkish soldier is good; he thinks it no degradation to cook his pilaff himself; and the habit of making soup I think far superior to the ordinary English regimental cooking. His facility in lighting a fire is marvellous: no sooner does a Turkish regiment halt than the tents are pitched, fire-wood is quickly procured, boiling water obtained, and a dinner soon ready; whereas an English-

man will be waiting for the supply of wood, not knowing whence it is to come, while the Turkish soldier has a good fire.

The clothing, according to the regulations, is good; but during the war I saw some most wretchedly dressed soldiers at Balaklava and Eupatoria, although many belonged to Omar Pasha's picked troops. The means of transport were, perhaps, worse in the Turkish army than in any of the armies engaged in the late war.

The details in all Turkish arrangements are incomplete.

Badly clothed, and worse fed, the soldiers at Eupatoria were constantly (when we arrived) expecting an attack of the Russians, and continually on the alert against the enemy. They were frequently employed in digging trenches, making batteries, &c., to defend Eupatoria. Subjected to a burning sun by day, and to a winter coldness by night, they fell victims to the various miasmatic influences abounding in and around Eupatoria.

In examining the houses, I found them badly constructed as protectors against the cold and rain in winter, and the effect of the heat of the sun in summer. Outside each door was a heap of refuse, animal and vegetable matter, removed by the dogs, the only scavengers, or by the rains, which frequently occur. The method of heating the dwellings was by open charcoal fires, or, as they are termed, "mongals,"—not an uncommon cause of death. The apartments were overcrowded; several lived and slept in one room, and many occupied the same house; and at night they lay down in their day clothing.

There was no regular system of drainage; large cess-pools were frequently observed near the habitations; and the water-closets or privies were generally placed on the ground floor, beneath the living-room.

The supply of water was very defective and insufficient, particularly during the summer; and owing to the salt lakes in the neighbourhood, the water was quite brackish, and had a purgative effect.

The climate, being dry and exciting, produced in various diseases much apparent fever, and often deceived persons who did not thoroughly take all the circumstances into consideration; supposing that they were treating inflammatory disease, after depletion they found the patients rapidly sinking into the typhoid state, from which they could not rouse them. We found that the excitement was always followed by depression; it was the excitement of irritability, of nervous excitement rather than vascular, of asthenia rather than sthenia: and therefore, it was

necessary that much caution should be practised in the administration of antiphlogistics.

The summer heat was extremely intense, the thermometer rising at noon often to from 120° to 130° and 140° Fahrenheit; whilst the cold of winter was severe, with a flat, open, unprotected country on the north.

The means of transporting Turkish soldiers, as I have before stated, was bad. During the months of January and February, when they were left exposed on deck, in being conveyed from Varna to Eupatoria during the night, many were found dead in the morning. One could not be surprised to find at Eupatoria many patients suffering from frost-bites, whilst cholera, fever, and dysentery existed to a great extent in the summer. In the camp outside the town, containing at various periods from 20,000 to 40,000 soldiers, as well as in the hospitals, no regular system of hygienics existed, and, if possible, less prevailed in the miserable town of Eupatoria. In all parts heaps of animal and vegetable refuse were seen, and the effluvium in some parts was fearful.

The Turkish officers always provide themselves, when on campaign, if possible, with lemons and olive oil, two substances equally, I am disposed to think, guards against scurvy. The effects of sugar, coffee, and a varied diet, combining meat, vinegar, &c., are highly beneficial, even when they do not contain vegetables, provided they differ from day to day; for it is generally observed that the influence of scurvy on officers is trifling compared with that on the men. Thus in Germany, during the war between the Austrians and Turks in 1720, when the Imperial army wintered in Hungary, many thousands of the common soldiers, but not one officer, were cut off by the scurvy. This fact bears very strongly upon what I myself have noticed of the hundreds who died under our care,—in no instance did any officer die from the same disease.

The diseases which existed at Eupatoria were scurvy, remittent and intermittent fever, diarrhœa, cholera, and dysentery, carrying off upon an average 1000 per month.

During the time that a portion of our staff was retained there, from April to October, owing to the refusal of the Inspector-general to take hospitals unless they were arranged according to his Indian notions, in no case were patients placed under the treatment of the English surgeons, as he ordered that no member of his staff should give medicine to the sick; and of eleven medical officers living here during six months, 1 died from cholera, 1 from fever, 2 resigned and went to England, 1 was invalided to England, 1 to Varna, 1 died

soon after reaching Trebizond, and the rest drew on a miserable existence of inaction, scarcely one being in a state of health on leaving.

We were British officers, sent out by her Majesty Queen Victoria to assist the wretched Turks. That we should not swerve one tittle from the rules of the service appeared to be the idea guiding our chief. Owing to the difference in the mode adopted by Dr. Farquhar—who was well acquainted with Turkish and Egyptian habits, having lived several years at Alexandria,—during the same period, we not only gave medical relief to nearly 1400 sick and wounded soldiers, but we cured a vast number, and returned to the ranks of Omar Pasha's army, during August, September, and October, 343 men; while 244 convalescents were sent to the villages—men who had come to us in a miserable state of disease, wretchedness, and filth; and subsequently when a portion of the British Staff were serving in Mingrelia, it was not an uncommon circumstance for an English officer to meet Turkish soldiers who did not forget the kindness they had experienced.

Although Eupatoria is not a Turkish town, yet the principal inhabitants being Tartars, its general description, as to houses, drainage, &c., will apply to Varna.

I shall now proceed to speak of the diseases which came under my especial observation. Of the patients admitted during the whole time, 1400 were under treatment, suffering from the worse forms; the milder cases were sent to the Turkish hospital; and the convalescents to the neighbouring villages, where, by means of pure air, out-of-door exercise, and a good quantity of vegetable food, most rapidly recovered, but few died; and, did the latter occurrence take place, "Mashallah" would, perhaps, be the exclamation of "Saleh Bey," for no medical man was sent with them by the Turkish authorities.

During the three months ending November, 1855, there were admitted, under the care of the British Medical Staff, 862 patients, viz., Turkish soldiers from Eupatoria, 756; Turkish soldiers from Varna, 30; Turkish Polish Cossacks, 62; Bashi Bazouks, under Brigadier-General Havelock, 6; accidental admissions, 8. Of these, there were discharged cured, 343; convalescent, 244; incurable, 19; died 91; remained under treatment, November, 1855, 165.

Of the diseases which came under our observation, the majority were of the scorbutic diathesis, complicated, with irritation of the stomach and intestines, and affections of the liver, kidneys, and other viscera. Of 608 patients admitted into the

palace hospital during six months, 285 came entirely under my own treatment. I will, therefore, take 150 of these cases, and examine them more carefully. Of these, 101 cases suffered from scurvy in some form; 22 were simple cases of scurvy, 50 complicated with diarrhœa, 29 with diarrhœa and other diseases[a], whilst 49 cases were not affected with scurvy,—the latter cases being chiefly admitted from the camp outside Varna, consisting of Turkish regular soldiers—infantry, Turkish Polish Cossacks, cavalry, and Bashi Bazouks or English irregular cavalry,—the aggregate number of the whole being 20,000 men, forming the army of reserve to join Omar Pasha in Asia Minor.

Thus it will appear that more than 66 per cent. of the cases admitted suffered from scurvy in some form, and, were the previous three months included, a higher per-centage would be seen to exist.

Of the diseases not complicated with scurvy, 39 were medical[b], and 10 surgical[c] disorders. Of the former, 28 were fever, diarrhœa, dysentery or cholera, 1 bronchitis, 1 phthisis, and the remainder, various diseases.

Of the surgical diseases there is nothing particular to remark, with the exception of the small number in proportion to the other cases; but I was told on inquiry that scarcely one soldier of a hundred who are wounded in action survives. I shall, however, refer to this subject hereafter.

It will be remarked, in the statement of the statistics, the absence of venereal disease to any great extent. I myself have been often surprised at the few cases which came under my observation, more especially as several of our patients had been recently quartered at Bucharest, or on the banks of the Danube. I believe that the absence of the disorder does not arise from the fact of non-exposure, but rather from the hygienic precautions of circumcision and the regularity of ablution after any excess, as laid down by their religion. On my arrival in the Crimea, when conversing with a surgeon attached to the English hospital at Balaklava, he stated that he believed that Turkish soldiers were dying in great numbers from anal syphilis.

[a] Dysentery, 8; diarrhœa and bronchitis, 8; diarrhœa and pneumonia, 4; diarrhœa and abscess, 4; diarrhœa and frost-bite, 2; diarrhœa and typhoid fever, 1; diarrhœa and hydro-thorax, 1; diarrhœa and general dropsy, 1. Total 29.

[b] Intermittent fever, 7; remittent fever, 5; typhoid fever, 5; typhus fever, 2; ephemeral fever, 1; diarrhœa, 5; dysentery, 2; cholera, 1; ascites, 1; phthisis, 1; bronchitis, 1; lichen, 1; dementia, 1; hemiplegia, 1; scabies, 5. Total, 39.

[c] Disease of the metatarso-phalangeal articulation of the big toe, 2*; gangrene of gum, 1; gun-shot wound of right thigh, ball passing through it, and lodged in outer side of left thigh, 1*; cataract, 1*; syphilis extending to anus, 1; trichiasis, 1*; frost-bite of foot, 1; fracture of radius and ulna, 1; orchitis, and stricture of the urethra, 1*. Total, 10. The patients marked thus * were operated on.

Such a disease I subsequently found very rare, as only one case came under my own treatment; and in conversing with my colleagues I did not find that they had seen many cases. Of the deaths which took place, there were 11·55 per cent. among the patients admitted from Eupatoria, and not quite 6·5 per cent. of those from Varna. The latter were sent direct to the hospital, whilst the former had been under treatment in the Turkish hospitals.

(*To be continued.*)

Art. V.—*On the Use of the Tobacco Enema.* By R. W. O'Donovan, M. R. C. S.

Tobacco, in some form of preparation, has at different times been used either as a narcotic, sedative, emetic, diuretic, or cathartic, and I think I may add in distinctive nomenclature, a direct antispasmodic.

The diseases in which it has been most frequently prescribed are constipation of the bowels and hernia. In the treatment of the former the leaves of the fresh plant have been directly applied to the anus by the native Indian doctors, others have injected the smoke, while an infusion has been taken by the mouth or administered as an enema.

Like digitalis, tobacco labours under the questionable character of either "killing or curing," a notoriety derived equally, perhaps, from the extravagant praise of its supporters, as well as the unmerited censure of its opponents.

My own experience, drawn from the following cases, leads me to think favourably of its use. I would, however, strongly urge the following conditions, viz., firstly, that the surgeon should in all cases administer the enema himself; secondly, that he should not leave his patient until all symptoms of tobacco sickness have ceased, and reaction set in; and thirdly, never to use the drug without having a stimulant ready at hand. I always give some whiskey and water, a stimulant I think generally liked best.

I prefer giving the enema in small bulk, from two to four ounces of water, though the formula of the London College is a pint; for two reasons, first, that by not over-distending the rectum, the enema will be more certainly retained; and, secondly, for obvious reasons its constitutional effects are not likely to be so violent or long continued.

Case I.—October, 1841, I attended —— Kelegher, a poor

old man, about five miles distant from my residence, many years subject to hernia, for which he wore a truss. Latterly, however, from the weakness of the spring and insufficiency of the pad, it became useless, and he went about without giving it any support. The day previous to my visit having been labouring hard, the bowel descended to an extent more than usual. He suffered a great deal of pain during the night, both in the hernial tumour and in the abdomen. 2 o'clock P.M., when I saw him, his agony was very great, the hernia about ten or twelve inches in length. He had vomited before my visit; pulse small and quick. I endeavoured to return the hernia by the taxis, having first given him a hot hip-bath; but, failing, I determined on trying a tobacco enema before I would send him to the Infirmary, for even with assistance it would have been impossible to have operated in his wretched, dark cabin.

I prepared the enema, infusing one drachm of tobacco in about two wine-glassfuls of boiling water for twenty minutes, and lodged it merely in the rectum. I well recollect the anxiety, almost agony of mind, I suffered, watching the results. In about ten minutes I was startled by hearing "glug—glug," as if fluid was escaping from a bottle. On examining the tumour I found it reduced to half its size, and rapidly disappearing without assistance. I used a little more pressure, when the entire contents were at once got up. The sickness and nausea ceased in a short time after he got some spirits and water.

Case II.—January, 1842, I was called to see Mrs. M'Hugh, a very old woman, mother of a large family, subject to constipated bowels. She has been for three days without a motion, but is not suffering as much as might have been expected. Got calomel and jalap, with other purgatives, and repeated enemas, before I saw her. The abdomen is hard, a little swollen, with some slight tenderness. I infused about half a drachm of tobacco in a tea-cupful of hot water for twenty minutes, and injected it. In five minutes the pulse became accelerated and weakened, and in two minutes more she complained of nausea with pains through the abdomen, which were attended with the escape of flatulence, unaccompanied by any sound, and almost immediately after she had a copious motion of hard, dry fæces. She got some spirits and water, and rapidly got well, suffering some annoyance from the disagreeable smell of tobacco for a few days.

Case III.—March 13, 1843, I visited Sergeant Keenan, an old, but large and able-bodied man, ill three days with con-

stipated bowels. Abdomen swollen and tender on pressure; he got castor oil, calomel, and senna and salts, before I saw him: ordered ten grains of calomel, and a purgative enema in three hours after.

14th. Enema retained; no motion; abdomen more tender. Administered a tobacco enema, prepared with one drachm of ordinary tobacco infused for twenty minutes in a wine-glassful of boiling water. A cold perspiration broke out over his body; he began to retch and yawn; smell of tobacco strong on his breath. A stream of exceedingly foul air came away in a continuous volume, followed by large quantities of fæces. He continued sick during the day, and got punch occasionally, but was quite convalescent in two days.

Case IV.—October, 1845, I visited a poor woman suffering from constipation for three days. She took several doses of active medicine before I saw her, and also had purgative injections. I found her suffering a good deal; abdomen hard, not much swollen; pulse small and quick; her breathing hurried. I infused about half a drachm of ordinary tobacco in a glassful of water and injected it. In a very few minutes she got very sick, nausea, retching, cold clammy sweat over the face, which was extremely pale; pulse fluttering, odour of tobacco strong from her mouth. She commenced almost immediately to void fæces and urine, apparently without an effort. I gave her at once half a glass of whiskey, and repeated it in twenty minutes. She continued very weak for the remainder of the day, and was ordered an effervescing mixture, with spirits as a stimulant, but got quite well in a few days.

Case V.—October 25, 1853, I attended —— M'Corry, aged 50, who has suffered from reducible oblique inguinal hernia of the right side for some years. He was always, however, able to return it, and unfortunately neglected to adopt the precaution of getting a proper truss; the one he used being a "cast-off" one, and much worn, it did not cover the inguinal ring entirely, and latterly he seldom put it on. This morning, when lifting a "creel" of turf, he felt the intestine come down suddenly, and though he experienced considerable pain at the moment, he did not proceed to return it, but continued about his work for two hours, by which time, from the increased descent of the bowel, the pain became very severe. He then endeavoured in his usual way to reduce it, but without success, sickness of stomach and faintness supervening. I was sent for, and saw him four hours after the accident, and found him lying on the floor writhing in agony, the hernia enormously enlarged, measuring about fourteen inches from the ring

to its base, presenting the appearance of hernia with hydrocele, having about midway a well-marked line of division, as if intestine formed the superior portion of the swelling, and fluid the inferior.

Having placed his body and limbs in a proper position, I endeavoured by the taxis to return the hernial contents, but ineffectually. During my efforts he suffered great pain. Having determined to administer a tobacco enema, I infused one drachm in four ounces of boiling water for twenty minutes, and, having injected it, I recommenced the taxis. In about six minutes the constitutional effects of the tobacco became evident; the skin lost its temperature, a cold sweat broke out over the body, nausea with severe retching came on. He now bore the handling of the scrotum without complaint. The sac gradually became emptied; at first the air passed up in bubbles, afterwards more continuously, and then with little difficulty the entire contents were reduced. He got some spirits and water every twenty minutes, and rallied perfectly before I left him.

Case VI.—November 16, 1857, I attended in consultation with Dr. W. Finlay of Swanlinbar, —— Magovern, aged 76, but before this accident a very healthy man. Has had an oblique reducible hernia for several years, and used a truss, but for some few months he left it off, and merely wore a pad and handkerchief. I learned that on the previous day, when getting over a stile, he stumbled and got a severe shock, and that almost immediately the intestine protruded, but did not descend into the scrotum. Dr. Finlay saw him in the evening and ordered a hot bath, gave him an enema, and endeavoured, but without success, to reduce the hernia. On examining him I found the hernia about the size of a small egg, firm and dense to the touch, and not particularly painful. The taxis was again tried for a considerable time, but without a satisfactory result.

As he positively refused to allow an operation, convinced that, as he was never sick during his long life, his death was at hand, a tobacco enema was administered, but without a successful issue. The constitutional effects of the drug were not well marked. He became sick, but the prostration attending its administration with my other patients was absent. We waited for an hour, trusting he would allow the operation, but eventually had to retire. He died the second day.

I have thus briefly given to the profession those *disjecta membra*, scattered through my case-books. A guide for myself, they were never intended for publication. I offer them *quan-*

tum valeat, and as a mere *exposé* of private practice. I have intentionally avoided referring to authorities, or incumbering the article with quotations or extracts.

My remarks shall be brief. I will first observe that *all* my patients were smokers,—a circumstance which should be taken into consideration when reasoning on the propriety of administering a tobacco enema, for if in such a class of patients so great an amount of sickness follows its use, would we be justified in arguing that its effects in non-smokers would be seriously increased?

While unable to solve this difficulty, I must say, nevertheless, that from the rapidity with which these bad symptoms yield to treatment, I would not myself hesitate to have recourse to it in cases of obstinate constipation, when other active remedies had failed in affording relief.

And in hernia of long standing, particularly where the intestine is distended with air which appears to increase the resistance to reduction, an effect it certainly produced in my first and second case, I would unquestionably administer it before advising an operation, particularly in the country, where circumstances beyond the control of the surgeon often interpose to render the chance of success very problematical.

M'Corry's case was to me one of exceeding great interest, and I beg to draw attention to one practical feature connected with it. Evidently a case of entero-epiplocele, the outline of its contents was as well marked as if a cord was drawn tight across the tumour, but I must confess the diagnosis of its nature was a matter of considerable difficulty. The lower portion of the hernia presented all the characteristics of hydrocele,—nearly transparent, with a most deceptive feel of fluctuation, pyriform. One only fact prevented my committing a fatal error by puncturing the supposed hydrocele, viz., that while in bed he was able to feel the testicle of one side as distinctly as the opposite, and that no swelling existed until he assumed the erect posture. I have operated for hydrocele where the transparency of the tumour was not near so great, and the sense of fluctuation not more evident.

Art. VI.—*Some Observations on the Treatment of Small-pox.* By E. W. T. Mandeville, Surgeon, 3rd Indian Depôt Battalion, Chatham.

As I consider that any mode of treatment which would mitigate the severity and disfigurement consequent on this horrible and frightful malady must be, indeed, a great boon; and as I had an opportunity during the spring of this year, when small-pox was so prevalent in Chatham garrison, of observing the disease, I propose laying before the readers of this Journal the particular line of treatment which I adopted in all cases of small-pox, especially of the confluent form, and when unattended with other complications; and I do so with the hope that some others of the profession may be induced to give it a trial, in order to ascertain if the same favourable results will follow upon the use of a plan of treatment which has proved so successful in my hands, only one case having proved fatal out of above 30, more than half of which were confluent, and about 10 of an aggravated form, the throat being in all more or less affected, and the greater number having been subsequently complicated by the formation of numerous abscesses over the body, the face excepted. There were only a few cases in which the head or lungs were affected, but none in which the abdominal viscera became engaged.

As this paper is not intended to be an essay on small-pox, I shall merely state the usual steps in the treatment.

As is the custom in all military hospitals, fever cases are immediately admitted when they present themselves; and during the prevalence of the small-pox the first symptoms of any eruption were carefully looked for, and the more especially in the present instance, as both rubeola and scarlatina were also then prevailing; and upon ascertaining that the eruption was small-pox, the patient was removed into the hospital set apart for that disease.

The treatment up to this time was the same as for common continued fever, but I now commenced what may be termed the specific treatment. The patient was directed to take a mixture composed of 2 drachms of compound rhubarb powder, 2 drachms of tincture of hyoscyamus, and $7\frac{1}{2}$ ounces of camphor mixture, in doses of two tablespoonfuls three or four times a day; but if the attendant fever was very high, there were added two ounces of the solution of acetate of ammonia to the above. This mixture was generally continued as long as the fever lasted, which was usually about the time when the pustules had fully maturated and the scabs had formed, the fever seldom extending

beyond that period. It was then omitted, and bark ordered, if there had been great prostration, after a serious attack. A draught containing one drachm of tincture of hyoscyamus, in an ounce of camphor mixture, was given at night, as soon as the patient complained of any restlessness or itching, which was about the second or third day of the eruption in the confluent form; but they sometimes complained of it on the first day, when the eruption appeared to be retarded, as if struggling to force its way through the cutis vera. This was continued every night as long as the sleeplessness from the pruritus continued, and at the same time the following liniment or ointment was laid on with a large-sized camel hair-brush three or four times a day over the face and any other part of the body of which the patient complained of being itchy, viz.: half a drachm of extract of belladonna, rubbed up with half a drachm of spermaceti ointment, to which were added $3\frac{1}{2}$ oz. of olive oil and $2\frac{1}{2}$ drachms of chloroform. The cerate was added to give it consistence and hold the chloroform in suspension, but the bottle must, notwithstanding, be well shaken before using, as the chloroform will subside after standing for any time.

In giving the above as being generally sufficient, I should have said, as the basis of my treatment, I wish it to be distinctly understood that I do not mean it in an empirical sense, as every case of small-pox must be treated according to the individual symptoms, and the practitioner must be prepared to meet every contingency or complication of other organs that may arise, either of the head, chest, or abdomen, and act accordingly; but, as far as I can at present judge, it appears to me that by adopting the above mode of treatment, the tendency to such complication will be much diminished or modified.

I may here say a few words on the rationale of the treatment. The mixture is intended both for the purpose of keeping the bowels free, and reducing the fever and irritation of the skin without depressing the system, as we cannot tell *à priori* what secondary affection may set in, in which the vital powers may be brought to the lowest ebb and require to be sustained by enormous stimulants.

As to the administration of the full doses of hyoscyamus at night, I wish specially to direct attention to it as a curative means in the treatment of small-pox, and I consider that without its aid I should not have had anything like the success which I have had; and there need be no apprehension of giving it even when delirium sets in (the latter being met by appropriate treatment)—the object which I had in view being both for the purpose of procuring sleep, as also of allaying the

irritation, and which is gained, I suspect, by its causing the eruption to force its way more kindly through the cutis vera; and this latter effect is also favoured by the external application of the chloroform and belladona ointment, which I consider a valuable adjunct in the treatment of small-pox. The patients invariably expressed their sense of relief soon after its application, some saying it made the skin pliable; others, that it made it feel cool; others, again, that it made it moist; but all felt it relieve the itching or tingling feel.

One remarkable fact which I have observed since I have commenced using this ointment is, that none of the confluent cases were pitted (with the exception of three cases, and in these very slightly indeed), and we could perceive, after the scabs became detached, the places where the original pustules were had an elevated instead of a depressed base, so that the subsequent absorption left the skin in its normal condition. I should, however, wish that other practitioners would try the ointment, in order to ascertain whether this latter circumstance was accidental or not.

Perhaps it may not be here misplaced to give one case, *in extenso*, almost one of the last which occurred in my battalion; and I do so, as it presents one or two features of interest, and besides, was one of the few in which there was slight pitting.

Private James S———, 75th regiment, aged 18, admitted 2nd June, 1858, an Irishman, had been formerly a sailor. This man had only been discharged from hospital two days previously, having had gonorrhœa and orchitis. He said he was attacked with a shivering fit, and had headach yesterday evening. Upon admission this morning he had the following symptoms:—skin hot; face much flushed; pulse quick; tongue furred, and severe headach; the bowels rather confined; no appetite. Ordered half a drachm of the compound rhubarb powder; the diet, spoon (which consists of two pints of tea and half a pound of bread), with two bottles of lemonade and two additional pints of tea.

June 3. The symptoms much aggravated, with slight nausea; restlessness; the tongue dry, and with excessive thirst. The powder to be repeated twice to-day, and the diet and extras same as yesterday.

June 4. Removed to small-pox hospital, as, at the morning visit, the patient was covered with a number of minute, thick-set papules on the face and neck, but with some slight abatement of the symptoms, as the tongue was not so dry, and the thirst not so great; the other symptoms much the same. Or-

dered a mixture composed of 2 ounces of solution of acetate of ammonia, 2 drachms of compound rhubarb powder, and 6 ounces of camphor mixture, of which he was to take two tablespoonfuls every four hours; and a draught at night of one drachm of tincture of hyoscyamus in an ounce of camphor mixture; diet and extras the same.

June 5. The papules, more elevated, have now made their appearance in a copious crop on the body and extremities; the symptoms much the same as yesterday, but there is more restlessness, and a great tendency to delirium. The medicines to be continued, and he was ordered a powder of 3 grains each of calomel and James' powder to be taken immediately, and the chloroform ointment to be applied three or four times daily to the face and other parts of the body, if necessary. Diet and extras the same.

June 6. The eruption is now of a vesicular form, very close set, and filling fast. The spots will be of a large size, and must coalesce on the face. However, the patient is much easier, the ointment keeping the skin cooler and more pliable, and he expresses a great sense of relief from it; the calomel has subdued the head affection, though the fever is still very high. The mixture, draught, and ointment to be continued as before. Diet and extras the same.

June 7. The vesicles continue to enlarge; complains of sore throat, which upon examination was found to be caused by an eruption on the roof of the mouth, arches of the palate, and back of the pharynx; there is also again a slight tendency to delirium. Ordered the calomel and James' powder as before; the draught and liniment to be continued, but half an ounce of the tincture of hyoscyamus was substituted for the compound rhubarb powder in the mixture, and the throat to be touched with a 20-grain solution of nitrate of silver. Diet and extras the same.

June 8. The head better, and is as well as can be expected, considering the severity of the attack and the amount of fever present. The vesicles have run into one another, and are commencing to maturate, many of them with a depressed apex. Continue mixture, draught, and ointment. Diet and extras the same, with the addition of 2 ounces of arrow-root.

June 9. The patient slept well last night, and not so much fever, though more restless, this morning. The pulse is still high, the tongue moister; the eruption is now pustular, and of very large size where discrete on the body and extremities, but it has run into large patches on the face; there is also considerable swelling of the palpebræ. The medicines to be

continued as yesterday. The diet and extras the same. 8 o'clock P. M. he appeared very low and restless; the tongue being dry and brownish, the hyoscyamus draught was ordered not to be given, but 2 gills of wine instead.

June 10. Slept well last night, and the wine appears to have agreed with him, as the tongue is much moister, though to a casual observer he would appear much lower and more restless. (My assistant, Mr. Davis, 75th regiment, who entered this case, here observes, that he expects an improvement to-morrow.) Mixture and ointment to be continued. Spoon diet, with the wine, lemonade, arrow-root, and tea, as yesterday.

June 11. There is every appearance of amendment this morning, some of the pustules on the face commencing to desiccate, though on the extremities they are still only maturating; does not complain of the throat. The medicines and diet as yesterday.

June 12. The crisis has evidently passed, and the patient much improved. The medicines and diet as yesterday.

June 14. Steadily improving since the last report. The scabs have nearly all disappeared from the face, and (with the exception of a very few spots of small size, which I do not think will ultimately show much) the places where the pustules were have an elevated base, instead of a depression. One curious circumstance in this case is, that though the face and rest of the body are now nearly free from scabs, the pustules on the hands have not yet burst, and remain large, round, and full formed. Omit mixture and ointment; ordered instead to have two tablespoonfuls of a mixture of infusion of bark, 8 oz., and tincture of orange-peel, 3 drachms, three times a day. Diet, spoon, with half a fowl, a rice-pudding, half a pound of bread, one pint of milk, two gills of wine, and one pint of porter.

June 17. Getting stronger every day. The hands are now free from scabs, but a large boil is forming on the right arm. The mixture and diet continued.

June 20. The abscess was opened to-day. The patient is gaining strength rapidly. Continue mixture and diet.

June 26. The patient is now convalescent, with full diet, with one gill of wine and one pint of porter; will be kept in hospital for some time longer, as he is too weak to do any duty.

I may here state that I am greatly indebted both to Assistant Surgeon M'Intyre, 11th regiment, and Assistant Surgeon Davis, 57th regiment, for the manner in which they carried out my instructions during this epidemic of small-pox.

Art. VII.—*On Cancer*[a]. By Maurice Henry Collis, M. B., M. R. I. A., F. R. C. S., Surgeon to the Meath Hospital and County Dublin Infirmary; and Examiner in Surgery to the Queen's University in Ireland.

(*Continued from* vol. xxv. p. 339.)

In the former part of this essay I have endeavoured to define cancer; to describe its special element; to show what causes chiefly interfered with the recognition of this special element. Before passing on to treat of the question of its origin in the economy, it is necessary to take some note of the peculiarities of those kindred growths which most resemble it, and which are most frequently taken for it. Writing, as I do, mainly for those who have not studied these questions with the light thrown on them by the microscope, I must be pardoned if much that I shall have occasion to say is already familiar to the educated microscopist. For the illustration or proof of the argument reference must be made to facts that are already well known to him, and to conclusions for him long since established. It will not, however, be without its use, even to such readers, in encouraging them against opposition.

One of these, an old and valued friend, thus writes:—"Je crois que vous soutenez une bonne cause, et je ne désespére pas de voir par vos efforts les esprits serieux revenir dans la bonne voie, dont voulaient nous écarter les inepties de certaines gens qui ne connaissaient rien a la micrographie."

Of the surgical affections liable to be confounded with cancer, there are some in which error of diagnosis will only occur as the result of ignorance or culpable carelessness,—though, when we read of Liston plunging a lancet into a cancer, and Velpeau amputating an abscess, we may well pause before we censure such mistakes in too harsh language.

Syphilitic tubercle of the lip or face resembles genuine schirrus very closely, and has been occasionally mistaken for it, and removed by operation. The syphilitic may be known by the absence of sharp, darting, or plunging pains, by its more evenly circular outline, and superficial extent of ulceration; the

[a] Explanation of the plate:—

Fig. 1. Section of Epulis, showing warty enlargement of the papillæ and arrangement of epithelial cells, 200 diam.

„ 2, 3. Epithelial Cells from Epithelioma, 400 diam.

„ 4. Epithelial Cells pushing aside muscular fibres. The cells are smaller as they get deeper, 400 diam.

„ 5. Radiated arrangement of Cells of fibroid growth, 400 diam.

„ 6. Separate Cells from do., 400 diam.

„ 7. Arrangement of the secondary fibroid growths.

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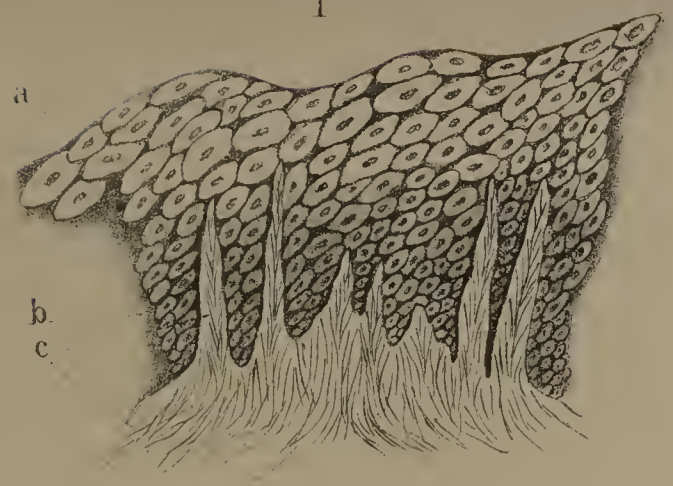

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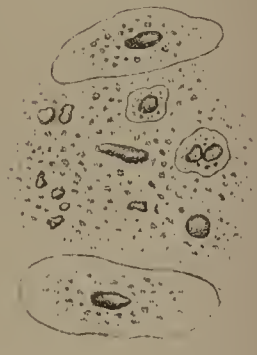

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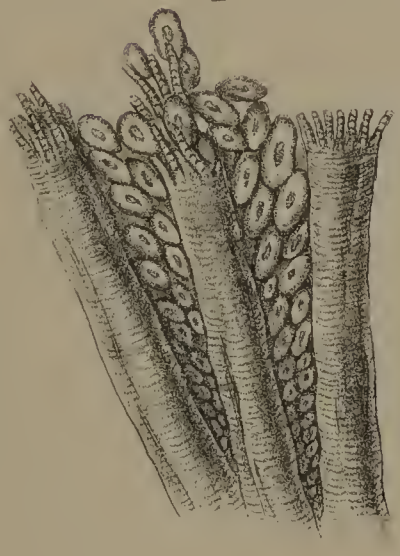

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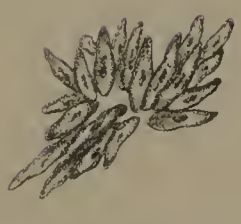

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other by irregular edges, undermined in one place, thickened and everted in another, and by a floor of great unevenness, with the addition of well-marked lancinating pain, as above mentioned, and of radiating fibrous bands, producing faint depressions in the surrounding skin. These depressions not only exist where the lip or cheek is much thickened, but are more apparent; in such a case, as the physical differences are concentrated in a small space, it requires a little practice and some careful inspection of the parts to recognise them: a small pocket lens is of use for this purpose. There are no specific microscopic characters attachable to syphilis in any form or stage; so that any diagnostic evidence of this kind must be negative when the disease is syphilitic.

Of all tumours, simple epulis seems to deviate least from healthy structure; it is essentially a hypertrophy; the fibrous basis of the mucous membrane is increased in quantity, and the papillæ are much enlarged; with the enlargement of these, the growth of epithelium keeps pace, each retaining at first, and sometimes permanently, its relative position to the other (Fig. 1). Generally, however, the epithelium, sooner or later, extends downwards into the interstices at the base of the papillæ, and the disease passes into what is known as malignant epulis, a form of epithelioma. Epithelioma is readily to be distinguished from scirrhus, whether it be found on mucous membrane, or on skin, or on the border ground between them. In all these localities it has its specific features, both in the early stage and when ulceration has advanced. As far as I know at present, it does not occur as a primary disease of the glands, and it never has its seat in the female breast, if we are to believe Velpeau; while cancer in the female breast is more common in its occurrence than all other tumours put together.

Epithelioma specially affects the border ground where skin and mucous membranes meet, and here its special peculiarities are most readily observed. The affection is primarily one of hypertrophy; it is only when ulceration commences that it takes on the more dangerous form of interstitial growth. It commences on the skin as a dry and scabby wart, which falls off from time to time, and exposes on each occasion an increasingly wide surface of ulceration. At the junction of skin and mucous membrane it begins as a chap or fissure, with indurated edges, and has a similar tendency to scab and ulcerate. When it originates on a mucous surface, it is either as a flat condylomatous wart, or as a deposit in the mucous follicles. Thus it is always as local hypertrophy of the investing epithelium that it commences; and from first to last it frequently retains a

strictly local character. Many of these growths upon the skin are nothing more than hard horny masses of dry epithelial cells, which occasionally fall off, and are slowly replaced. These may be either prominent or flat; we have frequent examples of them along the edge of the lip upon that part which is covered with coloured skin, external to the line of moist membrane; these are very harmless, and may last for many years unaltered in extent and depth, until accidental violence or inflammatory action excite them to spread. However, in the majority of epithelial growths, ulceration of the integument and deposit of epithelial cells in its substance take place sooner or later. The skin splits into papillæ as in a wart, and the ever increasing deposit of cells upon the surfaces of these papillæ separates them more deeply and more widely apart. A process of disintegration is continually going on in the cells, and the surface of parts not subject to evaporation is soaked in putrid remains. How far this aids in the spread of the disease by exciting inflammatory action and ulceration of the sound structures is hard to say. On mucous membranes, where moisture abounds, and growth is rapid, this tendency to ulcerate is very marked; cauliflower growths from the uterus, for example, although prominent on the surface, and consisting of aggregations of the epithelial cells, have their seat on ulcerations which may destroy large portions of the organ. The ulcers, when exposed, present jagged, irregular margins and surfaces; enlarged papillæ are visible during the early period of the disease, when the surface is wiped free from discharge; at the edges they may be detected at any period. The neighbouring glands are affected irregularly; sometimes not all; sometimes at an early stage. The impression on my mind is, that the tendency to infect neighbouring glands is greatest when the disease has its seat on the mucous membrane, and least when it is on skin and fibro-mucous membrane covering the alveolæ. General infection must be extremely rare, for those who still classify it as cancer can bring forward very few satisfactory cases of general poisoning from genuine epithelioma. The disease often kills by local destruction and general waste, but without anything which can be called special or peculiar cachexia. When removed, even completely, it will sometimes return in an aggravated form, and with rapidity; but this is quite exceptional; in the majority of cases in which the disease is removed completely, it does not return. All these facts show that there is much less tendency to general poisoning than in cancer, and justify us in classing it apart, especially as it is found to possess a different anatomical structure.

Some dissections I have made of epithelial disease of the lip show very plainly the mode of its growth as contrasted with that of healthy epidermis or epithelium. The cells of the ordinary scarf skin are small while in contact with the papillæ from which they spring, and as they advance towards the surface they enlarge by imbibition of the fluid which surrounds them, the enlargement being a vital, and not merely a mechanical process. Arriving at the surface, their growth ceases—atmospheric and other external influence cause them to dry up or burst, and fall to pieces—to be succeeded by fresh layers from within. The growth of epithelial cells is, in fact, guided by the same laws of vital endosmose and exosmose as all other cell-growths are subject to. Each cell, or group of cells, though extra-vascular, is nourished from the blood, and is as dependent on material supplied by neighbouring blood-vessels as if it were in contact with the capillaries. Each cell grows from a minute speck, scarcely discernible by high magnifiers, to its full size, by appropriating to itself the material supplied by the blood. In healthy growth the cells are smallest in contact with the papilla from which they grow. In the early stages of epithelioma, while it remains a true hypertrophy (Fig. 1), the cells retain the same relative position to the dermis, though vastly increased in number, and often pushed aside and crowded against one another, so that their order is hard to make out; especially when they collect in the cavity of a follicle.

When ulceration sets in, and when the warty papillæ have become separated, the cells begin to grow in a different fashion; a new phase in the disease occurs, and, from being a purely local hypertrophy, epithelioma becomes an interstitial growth, destroying by pressure, and extending its ramifications to various distances round its original seat. The mode in which this important change occurs is as follows:—In the angle made by the fissure of the skin between the bases of two papillæ, plastic exudation matter is effused; this lymph becomes the seat of growth of new cells, which, as they grow, increase the width of the fissure, and with the width its depth. Still, in the angle, new cells are formed until the interstices of the deeper layers of skin, and the interspaces of the areolar tissue, are filled with epithelial cells. Arriving at the muscles, the plastic lymph insinuates itself between the fibres, and separates them in like manner (Fig. 4); by degrees the proper muscular and cutaneous tissue is removed by absorption to some degree, or distorted and displaced in the middle of the mass of cells. The great peculiarity of this interstitial growth of cells is, that near the surface of the papillæ they are larger than they are deep

among the fibres of the skin or muscle, in contrast to their healthy arrangement.

This tendency to become interstitial is of the utmost clinical value, and explains to some extent at least both the mode of propagation to neighbouring glands and the recurrence of the disease after seemingly perfect removal. All through the body vital changes are continually going on. In these the lymph or plasma which moistens all the tissues is the most active agent, or, to speak correctly, the capillaries are the agents, the lymph is the material with which they work. Each part of the body takes from this lymph what it needs, and from it muscle builds up muscle, and the same inherent vitality adds another cell to the one that already exists. The material is not exhausted in any locality by being heavily drawn on—on the contrary, the more vehemently active the formative nisus, so much the more abundant is the material supplied through the blood-vessels. The balance of healthy growth is thus destroyed. The lymph now becomes the agent in the spread of the disease. It carries the germs of the morbid growth from the diseased parts into the interstices of neighbouring parts, and lodges them there—thus the little granules from which the epithelial cells are developed are carried into parts at a little distance from the original growth, and become fresh centres of disease. To the same agency is to be attributed the tendency to poison the neighbouring glands, whether follicular, sebaceous, or lymphatic. This should teach us to cut wide of these growths, and to examine the cut margins with a lens. The masses of epithelium are of such a size, owing to rapid accumulation, and the distortions of the natural structures are so considerable, that they are readily detected. This can be done on the spot with a pocket lens, and should never be neglected; and where the smallest deviation from healthy appearance can be detected, the surgeon must not hesitate to remove more and more of the neighbouring parts until the remotest fragment of disease is excised. The eye is here a better guide than the most experienced finger, but the eye itself must be educated by sufficient study both of healthy and diseased structures.

Of all tumours which are mistaken for cancer, those known as fibro-plastic are the most deceptive. Velpeau's case of napiform cancer, mentioned in page 459 of his work on Diseases of the Breast, seems to have been of this class. This case is one of the standing points of those who assert the identity of the two forms of growth. Apart from the fact that this case occurred in 1823, when nothing was known of the nature of

such tumours, and that to call it cancer or fibro-plastic is to beg the question, it is enough to say that a few exceptions do not invalidate general conclusions. Here was a case, if you will, of fibro-plastic growth, followed by general infection, and deposit of similar tumours in distant organs; but it no more proves the identity of the disease with cancer than a similar general tubercular deposit would. Who has not seen general tubercular infection following a local tubercular tumour, and as clinically malignant as a similar growth of cancer would be?—and yet no one will therefore infer that tubercle of that form is cancerous. This is an example of the mischief done by imperfect or unfair observation.

A simple description of a case of fibroid tumour which I removed some years ago will exemplify the nature of these growths, both in their clinical and anatomical features. The growth belongs to the class described by Dr. Hughes Bennett as fibro-nucleated, and mentioned by Mr. Paget in page 166 of his second volume.

Doyle, aged 51, labourer, admitted into the Meath Hospital in March, 1854, for a tumour on the dorsum of the foot. From his statement it would appear to have begun in July, 1853, as a small kernel on the outer side of the dorsum of the foot, subcutaneous and moveable. It grew rapidly until Christmas, 1853, when it had almost attained the volume of a large orange. It was never painful unless after hard labour; then it became severely painful, the pain being a steady, heavy pain, not lancinating. As it slowly increased, the integuments gave way over the centre of the tumour, where they were most on the stretch, until there was a spot bare of skin, about the diameter of a shilling. It bled a couple of times, slightly, from injury. There was a constant but very slight purulent discharge from the ulcer. The tumour was soft, elastic, almost fluctuating, and lay superficial to the tendons, which moved freely under it, and the skin, though tightly stretched, was not incorporated with it, even at the margins of the ulcer. The man's general health was perfectly good. No glands in the neighbourhood were enlarged, nor in the groin. He had some old cicatrices on the leg from varicose veins which had suppurated, and one gland in connexion with these on the inner side of the head of the tibia was enlarged. I mention this, because the presence of this gland was looked upon as decisive of the disease of the foot having extended beyond the primary seat, and was one of the main reasons why amputation had been proposed to him by a very eminent surgeon, as the only means that held out even the hope of a cure. The

man refused to lose his limb, in which conclusion, I must say, I quite agreed with him, and I removed the tumour on the 15th March, 1854. There was a good deal of hemorrhage during the operation, principally owing to my cutting into the substance of the tumour at first. The tumour was contained in a very thin, false cyst of condensed cellular tissue. It was nodulated, but not lobed; its texture was friable, tearing readily, and making it hard to get out whole. I cauterized the part on which it lay with caustic potash, both to check hemorrhage and destroy all means of re-growth, if possible. There were few large vessels running into it, but a general arterial oozing from the surface. Six days after the operation some fungous-looking growths sprung up on the floor of the wound, and he further got erysipelas,—which was then epidemic,—with severe fever and great enlargement of the glands of the groin. These alarming symptoms subsided under simple treatment, and in a fortnight all was healing kindly.

May 9. I snipped off three small nipple-like growths, and touched their bases with caustic, and dismissed him, well, by the end of June.

In September, 1854, and again in May, 1855, I removed from the cicatrix small tumours, the size of beans. On the last occasion I scraped the tendons, and denuded the fascia of all cellular tissue, and made sure of complete removal. Since that date I have repeatedly seen the man, who is a labourer, and resides at Donnybrook, and there has not been the smallest return of the disease, either local or general.

I shall now briefly describe the appearance of the tumours. The first and largest was slightly nodulated, owing to its accommodating its shape as it grew to bands of fascia that passed over it. The other growths were oval or globular. They were of a creamy white when divided, but the section was dry, nothing exuding from the surface when cut open but some serous fluid. They were friable, readily breaking up into little seeds or acini, which were individually very tough and resisting. These acini seemed to hold together in masses towards one common centre. When put under the microscope they were found to present small, pale, delicate cells (Fig. 6), not as large as the nuclei of cancer-cells, of a long, oval shape, sometimes elongated into a sort of tail or fibre. Numbers of these seemed to radiate from a common centre (Fig. 5). There was little fibrous basis, and the vascular tissue was very fine, and scarcely to be made out. The nucleus of these cells was also pale, and small in size, the cell-wall was easily broken up by the addition of water, which swelled it up and burst it, while acetic acid dis-

solved the cell-wall, and rendered the nucleus dim and shaded. It will be seen that in scarcely a particular does the above description agree with that of cancer. This growth was one of the so-called fibro-plastic group—growths which are allied to cancer, but not identical with it, and the study of which will teach us much on the subject of cancer.

The secondary growths differed from the original only in the manner in which the cells were arranged. They lay regularly like rows of beads—the centre of one cell corresponding to the ends of two other cells (Fig. 7). The clinical features that distinguish this from cancer are, briefly,—the absence of lancinating pains at all times, and the absence of glandular infection, which in the case of cancer would most undoubtedly have set in contemporaneously with the ulceration or giving way of the integuments. Other diagnostic features may have existed, but these were all I could discover before removal of the tumour, and they were enough to guide me in the treatment. When returning to the subject of the growth of cancer, and its treatment, the features of such cases will be found to throw some valuable light upon it.

Another class of growths, namely, the melanotic, are a source of difficulty in settling the question of the nature of cancer. Sometimes they seem to be most virulent; at other times they are very harmless. I have seen a paper by a Mr. Robertson, which gives a clue to the solution, and a practical guide in the question of operation. He says that all cases in which the deposit is confined to the eyeball can be treated successfully by extirpation ; while in all cases in which the black matter has been found external to it, among the other contents of the orbit, relapse has followed operation. He gives ample statistics in proof of this assertion.

The instances that I have seen coincide with these statements, and on examination I have found that the growths which are confined to the eyeball do not contain any of the specific element of cancer. They are simply hypertrophies of the natural pigment, which gradually extend into the neighbouring parts by a sort of mechanical infiltration such as occurs in epithelioma; they may distend the eyeball until it bursts, without incorporating the fibrous sclerotic with them; while the cancerous melanosis invariably poisons the sclerotic and the muscles and appendages of the eye. The clinical features of the two are marked by symptoms depending on these differences. The pain in cancerous melanosis is also, as usual, sharp and darting; in the other it is of a bursting, throbbing nature, until the distended sclerotic gives way or is punc-

tured. How far simple evacuation of the humours of the eye could be depended on for a cure of simple melanosis is yet to be determined. I prefer the safer plan of removing the sclerotic, an operation by no means difficult. It only requires a light circular sweep of a sharp scalpel to detach the conjunctiva and the muscles from the surface of the sclerotic, and to pass a curved scissors behind, to divide the optic nerve, and the eye drops out—if the eyeball is much distended, its contents may be previously evacuated by a puncture. This will, however, prevent a satisfactory examination of the growth.

(To be continued.)

Art. VIII.—*Suggestions relative to the Employment of the Tincture of the Sesquichloride of Iron in Puerperal Peritonitis, Iritis, and allied disorders.* By Thomas P. Heslop, Physician to the Queen's Hospital; Professor of Physiology, Queen's College, Birmingham.

During the past nine or ten months I have administered the steel tincture with excellent effects, in cases of epidemic angina membranacea, though at present altogether unrecognised. I use this term, not in the restricted sense in which it has been employed by a few writers, as Gölis; but as expressive of a species of sore throat, attended with fibrinous exudation on the buccal mucous membrane, fauces, and nares, more or less frequently extending into the air-passages proper; moderately contagious; intensely adynamic in its general manifestations; constantly accompanied by severe and even fatal hemorrhages; for the most part attacking those who have for some time previously been out of health, and especially those whose hygienic environments are open to criticism.

I was led originally to hope that this powerful tincture would prove of service in that fearful malady, by observing its alliance with erysipelas, to which also attention has been drawn by some of its earliest delineators; the tendency to hemorrhages; and, above all, the bad effects of all remedies of a depressing nature. The results achieved by the medication which I entered upon last August have raised a belief in my mind that in some allied disorders, attended with the exudation of a plastic fibrine in great quantity, epidemic, contagious, highly adynamic, and, for the most part, resisting all known remedial measures,—the same medication might, mayhap, prove of service.

From the particular branch of the profession which I practise, I have very rare opportunities of putting my views to the test of experiment, so have no resource but to take the somewhat unusual course of urging a trial of a special mode of dealing with these fatal disorders, that mode not having hitherto been the subject of my own experience.

It is rarely indeed that any physician, however instructed, or however experienced, can feel that amount of confidence in the utility of a proposed therapeutical measure as to entitle him to lay it before the profession without having previously employed it himself. Still more rarely can he be warranted in predicting with certitude its effects. We have, unhappily, no such definite and universal laws in medicine as in astronomy; we cannot predict events with a sure reliance on our science. The circumstances which may completely baffle our hopes, and bring to nought our anticipations, are too numerous and too little understood not to make us ever doubtful of the strength of *à priori* reasonings, until actual experience has given them validity. But it should be remembered that analogical argument has proved to be of signal service in the past history of medicine, both in reference to diagnosis and therapeutics, just as it has availed much in political and social science.

I shall not enter here upon a detailed account of the treatment of diphtheria or membranous angina, by means of the local application of dilute hydrochloric acid, and the internal administration of tincture of sesquichloride of iron, conjoined with stimulants and careful nourishment of the patients. I have recently, though at present in a fragmentary manner, placed my views upon this subject before my professional brethren in the columns of a London journal; and Mr. Houghton, of Dudley, has sent some illustrations of the same mode of practice to the same journal, which will shortly be published. That fearful disease has been epidemic over a considerable portion of England for the last twenty months, and has been peculiarly prevalent in the midland district, of which Birmingham is the densely populated centre. During the whole of that period I have enjoyed the most favourable opportunities of studying the disease; and while my success in its treatment during the first twelve months of the time was no greater than that of my neighbours, or than that of our French confréres, whose efforts to cope with this, to them familiar, malady have been confessedly baffled—I have during the past eight or nine months obtained results of a nature so remarkable as to induce me to state, and often to reiterate in the consultation

room, that I am unacquainted with a severe affection, which, when treated promptly, answers with equal rapidity and equal certainty to the endeavours of the physician.

The disorder attacks the weak—those subject to conditions usually predisposing to pestilential maladies, overcrowding, bad air, imperfect sewerage, bad water, damp houses; persons recently the subject of other affections, more or less severe, as scarlatina, measles, albuminuria, diarrhœa, erysipelas. It is contagious, and, like the last-named disorder, may be sporadic or epidemic, idiopathic or traumatic. It is characterized by a peculiar exudation, totally without a tendency to organization, and is occasionally attended with a disintegration of the invaded structures, leading to hemorrhage and abscess, as in scarlatina or erysipelas, or gives rise to a pultaceous putrilage, like the interior of the womb or the uterine appendages in general, in the most malignant forms of puerperal metritis or peritonitis. How much does all this remind us of that series of symptoms and phenomena which most authorities have agreed to term "puerperal fever"!

This subject has recently undergone a lengthened, but by no means exhaustive, discussion in the Academy of Medicine. One of the most accomplished members of the French school, and particularly conversant with every form of diphtherite, has declared that all the multiform phenomena of puerperal fever are met with in other states,—"en dehors de la puerpéralité." He avers of these phenomena, that they exist "chez le fœtus, ainsi qu'il résulte de la thèse de M. Lorain, qui, dans l'epidémie qu'il a observée, a trouvé, à l'autopsie de sept ou huit fœtus, morts dans le sein maternel, des fausses membranes fibrineuses dans le péritoine; il les retrouve chez le nouveau-né dans certains érysipèles, certaines phlébites, dans le muguet grave, dans la péritonite, la pleurésie, les abcès articulaires qui surviennent chez les nouveau-nés placés dans les hôpitaux ravagés par la fièvre puerpérale; il les poursuit encore chez la femme au début du travail, alors qu'il n'y a point encore de plaie, de porte d'entrée ouverte an virus, ou même pendant l'époque menstruelle. Poussant plus loin l'analogie, il rapproche de ces faits ceux que M. Velpeau, M. Tessier, ont signalés chez les opéres, et que tous les chirurgiens connaissent à merveille. Dans la fièvre puerpérale, comme dans la fièvre des blessés, on trouve en effet les abcés multiples, les inflammations purulentes des séreuses, les phlebites, les érysipèles, *les diphthérites*, analogues à la pourriture d'hôpital; d'un autre côté, les symptômes de la fièvre puerpérale, aussi bien que les lésions

que nous venous de rappeler, s'observent également chez les hommes atteints de traumatisme."—*Speech of M. Trousseau*[a].

One by one, the honourable Academicians expressed their distrust of any remedial measures hitherto advised. M. Cazeaux contented himself with "according, neverthless, a certain degree of confidence in calomel, in very small doses, until a copious salivation is induced." M. Bouillaud, differing from his colleagues in many points, so fully recognises the inefficacy of treatment, "in the greatest number of cases," that he leaves out its discussion.

It may not be wholly true that this disease resists every known plan of treatment. I, with many others, have seen, sufficiently often, useful results from the employment of turpentine, internally and externally; detergent vaginal injections, calomel and opium, and a stimulant medication in general, to induce me to pause before assenting to a proposition so injurious to the efforts of our predecessors. But enough is admitted on all hands, concerning the resistance of a severe case of the malady, especially when epidemic, to all our therapeutic proceedings, to warrant the statement, that this is a morbid condition, which, more than almost any common disease, demands a reconsideration of its *modus medendi*, and justifies even a bold experimentation.

Arguing, then, from the general history of the maladies, the vital and pathological peculiarities of the sufferers, and in view of the sad results of the present treatment of puerperal fever, I venture diffidently to suggest a trial of the same measures in it, which I have found so beneficial, so eminently curative, in diphtheria. I have given in this disease to an adult about 25 minims of the London tincture of sesquichloride of iron every two, three, or four hours, and have conjoined a few drops of dilute hydrochloric acid. I have also applied daily, sometimes twice a day, by means of sponges, a solution of hydrochloric acid, but little weaker than the dilute acid of the London Pharmacopœia, and have always enjoined the regular use of weaker gargles of the same acid. This, with the constant administration of stimulants, beef tea, milk, and jellies, has constituted my treatment, and I repeat here what I have already stated in other quarters, that since I have become aware of the value of this medication, nearly ten months ago, I have not lost one case[b].

I believe it will be found of the utmost service to imitate

[a] Archives Générales de Médecine, Mai, 1858.

[b] This is not so *strictly* true as at the time of writing the above statement.

every branch of this treatment in puerperal fever, with the exception, perhaps, of the stronger hydrochloric acid application. But even of this exception I am doubtful. So far as I know, obstetricians have never made an ocular examination of the walls of the vagina and uterine neck in puerperal fevers. And there are, unquestionably, good reasons for interfering as little as possible with these parts, under such or any conditions. Yet it is likely to be of great value, both in reference to diagnosis and treatment, could we become assured of the presence of diphtheritic exudation here. Under such circumstances I should not hesitate to treat the vagina with as little ceremony as the fauces, and boldly apply to its walls the dilute acid, as before mentioned. It must be remembered that the subsequent decay of these nitrogenous materials, exposed to the conjoint influences of air, heat, and moisture, is a fruitful source of the putrescent fœtor so well known in the chamber of the diphtheritic and puerperal patient, and assumes the highest importance when considered in relation to the possible resorption of these noxious substances.

But, at all events, whether the fluids trickling from the vagina or stagnating in that passage arise from the débris of the uterine walls, an actual exudation on their inner surface, or, as I believe in many cases, from these combined with aplastic deposits on the vaginal walls,—I entertain the opinion that weak injections of hydrochloric acid at frequent intervals, and administered by a competent person, with effective instruments, will be found a valuable aid to the obstetrician. I may be permitted to observe that solutions of nitrate of silver are likely to be of as little service here as I have found them to be in the analogous affection of the throat. They should be discarded from the treatment of these disorders.

Let me urge that the experimenter should dispel from his mind all notions of heat of skin, thirst, loaded tongue, being antagonistic to the employment of the steel tincture. I have had abundant evidence that these, with delirium and other serious symptoms more or less connected with the febrile condition, in no degree contra-indicate its use. On the contrary, all these symptoms have yielded in diphtheria, and, as is notorious, in erysipelas, with a rapidity which has surprised me. The remedy must be administered with unflinching hand, and must be steadily persisted in until the case terminates in well-established convalescence, or the contrary.

I fear that the suggestion of a preparation of iron in a febrile disorder will raise grave doubts in the minds of most persons who have not given some reflection to the subject. To them

I would say, is not erysipelas a pre-eminently febrile disorder, foudroyant in its character, formidable and sudden in its onset, more like some of the worst forms of puerperal fever, in this latter point of view, than almost any other disorder? And yet no one who has given a trial of this particular preparation in the former affection entertains a doubt that its use is one of the most valuable gifts of modern inquiry.

I caution my readers against the opinion, so likely to be entertained, that this is an iron preparation merely. I do not know that any other salt of that metal could be substituted for it. Every thing is against such a supposition. We are too apt to imagine the base of a given salt to be the sole source of therapeutic power in that salt, though it requires but little acquaintance with pharmacology to become convinced that bicarbonate of potash, nitrate of potash, and iodide of potassium, respectively possess qualities which render the substitution of any one for another generally impossible. But, again, the particular preparation in question is allowed to be productive of effects which may be fairly termed peculiar to it. Two especially may be here alluded to—namely, that produced by its administration in spasmodic stricture of the urethra, and that resulting from its employment in certain forms of aneurism. We are unaware, at present, of any other iron compound that can be substituted for it, in these conditions.

On these grounds, very briefly entered upon, I ask my brethren who enjoy the requisite opportunities, to seek to combat, by a safe though powerful agent, a disease which may still be with propriety termed the scourge of lying-in hospitals, and the terror of private families. If it shall prove ineffective, it is in the highest degree probable that it will not prove injurious, and such an experiment cannot, at all events, be fairly subjected to the charge that it prevented the administration of medicaments of such recognised utility that the chances of the recovery of the patient were appreciably diminished by such a proceeding.

I shall add but a few words upon the treatment of some forms of iritis. It is well known that there are cases of this disease occurring in the syphilitic state and in various asthenic conditions of the organism, which either primarily forbid the employment of mercury, the grand remedy, as at present taught, for fibrinous exudation—or which happen to arise during or soon after full mercurialism has been induced, and, therefore, contra-indicate, *ipso facto*, the further use of that drug. It is hardly necessary to state that it is in these conditions turpen-

tine has been found so valuable—a fact of great interest in reference to the previous portion of this paper.

Eight or nine years ago a patient was admitted into the General Hospital of this town, labouring under aggravated syphilitic lepra. He was treated with mercury, until its full constitutional effect was produced. The eruption disappeared, but an intense iritis almost immediately supervened. He was now placed upon turpentine, which realized all that its most ardent advocates have declared. The exudation was absorbed, and the integrity of the eye maintained. The patient subsequently became afflicted with one of the most severe phlegmons below the deep fascia of the neck which I have ever seen. But he finally escaped with his life, and with health apparently fully restored.

Now it is in such cases as this that I should push the steel tincture with the utmost freedom. I anticipate the greatest advantage from its use. The exudation may be got rid of, I believe, and the mercurial anemia combated at the same time.

I have recently observed the disappearance of the fibrinous film from vesicated surfaces in a case of diphtheria, and the complete arrest of its production under the use of this remedy, in the course of forty-eight hours after its first administration.

It is probable that there are cases of diphtheritic iritis having no connexion with any other infection, just as Von Gräfe has so ably proved there are cases of diphtheritic ophthalmia of an epidemic character, as lately observed by that distinguished ophthalmologist in Germany. Reasoning from my experience of the more common forms of the infection, I should imagine that the treatment above indicated would be found here of great value.

In conclusion, I beg my readers to enter upon a course of observation of the points alluded to, without prepossession, other than that which is inseparable from the human mind in its pursuit of truth, and to favour their brethren with a conscientious record of the results obtained.

Art. IX.—*Removal of the Superior Maxilla for Disease of that Bone, at the Kilkenny County Infirmary.* By Z. Johnson, A. M., F. R. C. S., &c. &c., one of the Surgeons to that Institution.

The publication of those surgical operations which are more formidable and more rare, with a faithful account of the result, and the experiences of the operator, seems to have been

always considered as a sort of debt due at once to the surgical profession and to the interests of humanity. The history of any individual case, however surprising or interesting, can be useful only when, contrasted with others of an identical or analogous nature, it helps to clear up some difficult or doubtful point, or sets at rest some question previously in abeyance. In both medicine and surgery many important questions can be decided only by a comparison of results; and the more extended this comparison, the safer the conclusions arrived at. This is true in all branches of the healing art, but nowhere is the accumulation of evidence more important than in the history of the capital operations of surgery. The propriety of undertaking any one of these must depend on the probabilities of success, and this can only be decided by reference to the results of all the similar cases ascertainable. The more formidable or uncommon the operation, the greater the necessity for all such evidence, and wherever the archives of the profession are inadequately supplied, the duty of adding to them would seem to become imperative in proportion to the importance of the case and the infrequency of its occurrence.

These remarks are offered as some apology for encroaching on the pages of the Dublin Quarterly Journal with the description of a case of disease of the antrum, and the details of the operation performed for its removal.

To any one possessed of a very superficial knowledge of the general anatomical relations of the superior maxillary bone, and of the parts interested in its removal, it must be sufficiently obvious that the excision or resection of the upper jaw in its entirety must be, under any circumstances, a very formidable undertaking; but when to the difficulties which encompass the removal of the sound bone we add the complications of disease, the derangements of structure arising from morbid changes, the displacement of parts, and the liability to various embarrassing contingencies which are always possible, but cannot always be foreseen, we only place under review the real circumstances which attend on the removal of a diseased antrum.

The operation is an important one, too, and not less so than it is formidable. The diseases of the upper jaw are numerous, and its removal is often the only means of saving or prolonging life. These diseases are, some of them, of malignant character, some of them benign in their nature. Either the bone itself or the cavity of the antrum may be the seat of the disease. Cancer, polypus, hydatid, caries, nævus, fibrous and bony growths, have all been met with in these parts, while occasionally collections of pus or occluded secretion have so

distended the antrum as to produce, in time, great deformity and inconvenience. In the case of malignant affections it is plain there can be no chance of life but by the entire removal of all infected parts; but even in the case of many of the non-malignant affections, removal of the whole upper jaw becomes necessary, because experience has shown that, if not effectually removed, they will go on steadily increasing until they come not only to produce hideous deformity and the loss of some of our most useful senses, but eventually interfere with functions essential to the support of life itself. It is not, then, merely as a triumph of skill or as a successful instance of surgical daring, that this operation is to be regarded, but it becomes truly important as one of the many methods which surgery has contributed towards lessening human suffering and prolonging life, when all other means of cure or remedy have become utterly hopeless.

There is another consideration which adds additional interest to this operation. The circumstances which call for its performance are comparatively uncommon, and very many an experienced surgeon has, no doubt, passed through a long life and extensive practice without once meeting a case requiring it. The records of the profession, it is true, cannot be said to be altogether deficient in data on this subject, many cases of its performance having been published by eminent surgeons at home and abroad; still, the entire amount of evidence available would scarcely appear sufficient for the purposes of the statistician, or the magnitude of the interests at stake, and under this impression another is now added to the cases already on record, and the experiences of the operator transcribed for the benefit of those who may have occasion hereafter to address themselves to this very momentous undertaking.

It is not intended here to enter into an elaborate history of, or even essay on, this particular operation. The subject has been already ably treated of; and those who wish to know who first projected so bold an undertaking, who had the honour of first realizing its execution, when it was first conceived, and by what train of reasoning its feasibility was established, will find all these and many other interesting particulars very fully given in an excellent article in the thirty-first Number of the present series of this Journal, by Mr. Butcher of Dublin, who has collated much valuable information on the subject, and given it to the profession, along with the details of his own very interesting and successful "Case of Excision of the Upper Jaw." I shall only briefly remark that the credit of first proposing the entire removal of the upper jaw for disease, Mr.

Butcher would seem to have established for Lizars of Edinburgh, so far back as 1826, although it would appear, according to the same authority, that Gensoul anticipated him in the actual performance of it in 1827, Lizars himself not having realized his own proposition until 1829. It matters little, however, to science who first proposed an operation, or who performed it, if only a useful addition has been made to our knowledge or our resources. If the question of priority should at any time arise, all must acquiesce in the justice of giving to each his due—"palmam qui meruit, ferat;" beyond this it is of little consequence. But in any researches on this head it will be necessary, to discriminate between two classes of operation really very different; or, as Mr. Butcher remarks when endeavouring to decide to whom the origination of the maxillary resection was due, "operations on the upper jaw may, in reality, be classed under two heads." They are—

1. The scooping process and removal of parts of the bone.
2. Removal or disarticulation of the entire bone.

The first of these, or removal of parts of the bone, appears to have been performed at a very early period, so far back as 1693, and since then by Desault, Garengeot, Dupuytren, and other surgeons. It was the proved inadequacy of this proceeding, particularly when malignant disease was present, that led to the inquiry whether a more complete and effectual operation could not be performed. Disease was apt to return, particularly malignant disease, where any trace of the morbid structure remained behind. The well-known tendency of malignant disease to involve adjacent parts rendered a complete extirpation here, as elsewhere, imperatively necessary; otherwise it was sure to reappear, and the patient, after having fruitlessly undergone all the suffering and danger of a painful operation, died miserably at last. This led bold and master minds to devise a more perfect remedy than had been previously attempted or thought of, and accordingly, much about the same time, the idea of removing the entire bone would seem to have been conceived by more than one, though Lizars may be entitled to the merit of being the first who formally proposed it, pointing out, at the same time, the way in which it might be done, and the several steps necessary, as he thought, for its accomplishment. Of these, one was the tying of the carotid artery, which was actually performed in some of the earlier cases of this operation, but which, as experience has shown, is not at all a necessary preliminary under ordinary circumstances.

It is this proposal of Lizars, the removal of the entire bone,

which concerns the reader at present. It has been frequently performed since[a], and with an amount of success greater than, perhaps, the most sanguine could have anticipated. Indeed, when we consider the nature of the parts involved, their anatomical relations, the severity of the operation, and the dangers, immediate and secondary, which attend upon it, one can scarcely but wonder not only at the share of success it has enjoyed, but even more at the rapidity with which the patients have recovered from it: in some instances the patient is said to have been up and moving about on the eighth, and out of doors on the thirteenth or sixteenth day. In most operations of a minor character such speedy recoveries are infrequent.

But the proposal of Lizars, since realized by so many eminent surgeons, would seem to have been surpassed by the Drs. Heyfelder, the elder of whom, when Professor of Surgery at Erlangen, removed both upper jaws in three different cases, first in 1844, and subsequently in 1850 and 1852. A very interesting essay on the Resection of both Upper Jaw Bones, communicated by the younger Dr. Heyfelder, will be found in the forty-fourth Number of the present series of this Journal, in which he gives the history of the cases operated on by his father, together with notices of the operation as performed by several other surgeons; from which it would appear that Dieffenbach, Maissoneuve, Langenbeck, Dietz, and Jüngken have, as well as his father, essayed this formidable undertaking with various success; and that out of nine cases so operated on, four had died; of these, one is said to have survived a few days, one to have died of apoplexy, and two from relapse of cancer, for the removal of which the operation had been performed, but after a lapse of fifteen months and twenty-three months respectively from the resection. Such were the statistics of this operation up to the year 1857. The amount of success indicated is almost more than could have been hoped for; and it is stated that the deformity resulting from the removal of both upper jaws is not so great as that which follows from the removal of one. Any one who wishes for further information on this subject will be well repaid by a reference to the very interesting essays of Dr. O. Heyfelder and Dr. Butcher, already alluded to, and to be found in the thirty-first and forty-fifth Numbers of this Journal.

The object of this communication being only to record one

[a] The surgeons who have performed this operation, up to the present day, are, Lizars, Dupuytren, Gensoul, Liston, White, Syme, Robert, Mott, Velpeau, Lisfranc, Dieffenbach, O'Shaughnessy, Fergusson, Heyfelder, Cusack, Butcher.

other successful case of removal of the superior maxillary bone, and to describe the nature of the operation performed, the disease which called for it, and the ultimate result, it becomes necessary to proceed with the more pertinent details at once.

The patient, Patrick Mullroney, an agricultural labourer, applied first at the Kilkenny County Infirmary, in the year 1852. He was then fourteen years of age, and of a particularly sound and healthy aspect, and easy, contented expression of countenance. He presented three tumours of the head and face: one, a small, vascular, and cherry-like tumour, growing from the conjunctiva of the upper lid and external half of the left eye; another, a soft, flabby tumour, to the outer side of the left temple; and the third, an enlargement, at this time but incipient, and not at all remarkable, of the left cheek.

The two latter tumours at this time gave him no concern. He resorted to the hospital for the purpose of having the tumour of the eyeball removed. But as it was exquisitely sensitive, and any interference with it proved extremely painful, he absconded before anything effectual could be done for its removal, not, however, until the tumour on the temple had been cut down on, and found to consist only of a mass of redundant areolar tissue, which was removed; and also one of the molar teeth was at this time drawn, and a trocar passed into the antrum, but without bringing away any fluid, or, indeed, throwing any light on the cause of the enlargement of the upper jaw.

He was not seen afterwards for several years. In the spring of 1857, five years after his leaving the hospital, he reapplied for admission. It would have been impossible now to recognise him, his features were so distorted by a large tumour occupying the left side of the face, raising the left eye-brow above the level of the right, depressing the palate of the same side on the tongue, while it protruded forward so as to remind the spectator of a snout, as seen among the lower animals, at the same time displacing the nose toward the right side, and obstructing both nostrils, the left completely, the right very considerably, by its pressure on the septum narium. When examined through the mouth, it was found to extend backwards toward the tonsil, while the right half of the palate was encroached on and narrowed by the lower part of the tumour, which extended considerably beyond the mesial line: indeed, the tendency of the growth was decidedly inwards or towards the right side, much more than to the outer or left side, where it would not have met with such solid resistance.

It was quite evident that all this deformity was produced by an inordinate expansion of the antrum maxillare; that it was not of a malignant nature was more than probable, as the general aspect of the patient indicated rude health; besides the growth had been very slow; the tumour was well defined, and its progress had been wholly unattended with pain.

It was in consequence of the great inconvenience he suffered that he applied at the hospital to beg that something might be done to relieve him. Independent of the deformity produced, deglutition was beginning to be interfered with, and he could not sleep but with his mouth open.

It was now (many months before the operation) that the photograph was taken, from which figure No. 1 is copied, and as it failed altogether to convey a just impression of the antero-posterior projection of the tumour, an attempt was made to take a plaster cast of the head and face, which could not but give an exact idea of the deformity. The patient, however, happening to open his mouth while the plaster was soft and semi-fluid, experienced so much annoyance from the flow of it into his mouth and among the crevices of his teeth, that he again absconded from the hospital on the following day.

He was obliged, however, to return again in the following November (1857). The tumour had continued to increase, and the inconveniences arising from it became more and more intolerable every day. It was now determined on to proceed to operation without delay, that he might not have the opportunity of absconding again.

A full consultation was held, and it was agreed by all that the disease was not of a malignant character, and that all the circumstances rendered the removal of the superior maxillary bone not only justifiable, but necessary. Accordingly, on the 2nd November, 1857, the operation was performed in the following manner:—

The patient being seated in an arm-chair, and an exploratory trial having been first made, to ascertain with certainty, before proceeding to the disarticulation of the bone, that the contents of the antrum could not be fluid (a fact which was determined by the removal of a portion of the anterior wall), an incision was now made, commencing below the inner canthus of the eye, and carried down the side of the nose, round the junction of the nasal cartilage and cheek, and vertically down the lip. An elliptical incision was next made, parallel to the fibres of the orbicularis palpebrarum, and extending from the commencement of the first incision outwards towards the zygomatic suture. The cheek was then dissected off the front of

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Fig. 1.

Patient before operation.

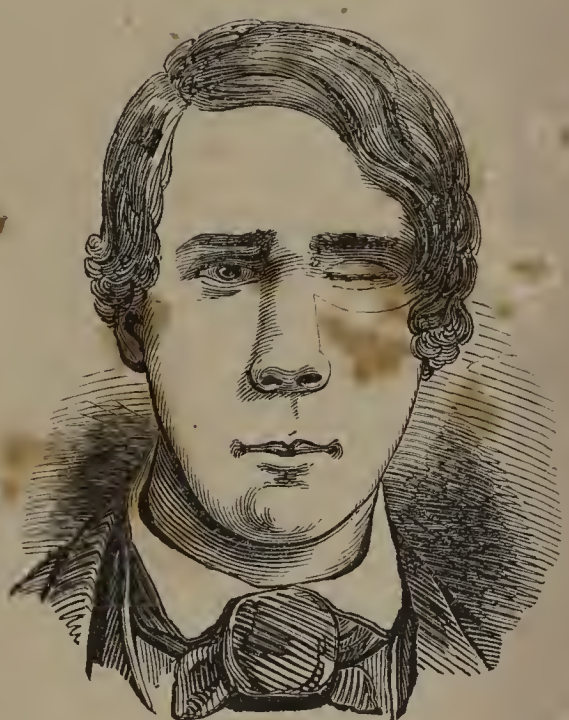

Fig. 2.

Patient, eight months after operation.

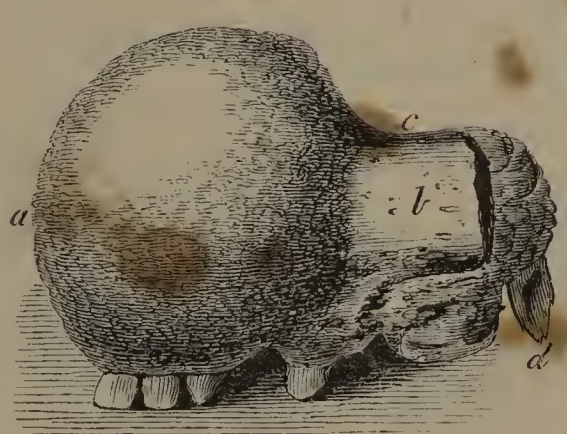

Fig. 3.

a, front of tumour; *b*, part of zygoma; *c*, part of orbital floor; *d*, fragment of sphenoid bone.

the tumour, drawn backwards and outwards, and held so by an assistant. The eye and its appendages were separated from the floor of the orbit, and kept upwards by means of a bent spatula, held by an assistant standing behind the patient. The zygomatic arch was divided by a strong, curved, bone forceps. This required the exercise of considerable strength, but would have been easily effected had the arms of the forceps been longer. The junction of the maxillary with the nasal and lachrymal bones was readily severed with the same instrument, one blade having been first insinuated into the compressed nostril. An incisor tooth had been extracted at the commencement of the proceedings, but in consequence of the encroachment of the tumour beyond the mesial line, it was found necessary to extract the incisor of the right or distal side. The membranous portion of the hard palate was now dissected from the bone by a thin spatula, placed upon the flat, as far back as the velum palati. The alveolar ridge was divided by a small saw in the site of the empty incisor socket, and the separation of the palate plates of the maxillary bones effected by the strong bone scissors, one blade having been applied along the floor of the left nostril, and the other inserted into the cut made by the saw in the alveolar process. The superior maxillary nerve, as it enters the infra-orbital canal, was divided by a scalpel-blade passed flatwise along the floor of the orbit. This was rendered in some degree difficult by the shape of the tumour, which rose in front very much above the level of the orbital floor, as may be seen by a reference to the drawing of the tumour given in the accompanying plate, or an inspection of the tumour itself[a], whereon the attached portion of the floor of the orbit will be seen on a line nearly with the zygomatic process. The same cause created some difficulty in the necessary division of the orbital floor, but it was accomplished by a very strong scalpel blade.

All the bony attachments of the upper jaw-bone had been now divided, and it remained only to dislodge the tumour from its position. With this intention pressure was made on it from above, in the expectation that it would have started from its place, but to no purpose, as it was found to be perfectly immovable. It was next firmly grasped, the thumbs of both hands embracing the upper and anterior conical protuberance of the tumour, and the fingers being introduced into the mouth, so as to take firm hold on the palate and alveolar ridge, and

[a] The tumour may be seen at the Pathological Museum of the Royal College of Surgeons, where it has been deposited.

although it was forcibly swayed upwards and downwards, and from side to side, alternately, it was some time before the tumour yielded in the least degree. At last, by the exertion of repeated efforts and great force, it gave way, but was found, on examination, to have broken across, and to have left behind a considerable portion of the hinder part of the growth, very solidly and immovably impacted in the parts behind and around it.

The removal of this latter portion was by much the most difficult and most anxious part of the operation. It presented a smooth face, or wall, in the seat of the fracture, extending back deeply among vital parts, and in close proximity with great vessels, and was extremely firm and immovable, while it afforded no irregularity by means of which lever or forceps could have gained any advantage. By nicking it, however, in suitable places, with Hay's small saw, both forceps and lever were respectively enabled to take their hold, and it was dislodged in several pieces, but not without some trouble. One piece, in particular, was so firmly incorporated with the front of the pterygoid process of the sphenoid bone as to bring away a portion of it along with itself, which may be still seen attached to the hinder part of the tumour.

The patient, who had endured the several steps of the operation with great fortitude, now fainted, and had to be laid for some time on a mattress, which was ready at hand.

The cut surfaces were allowed to remain exposed to the air until the patient began to recover from the syncope. The amount of hemorrhage on dislodging the hinder and more deep-seated portions of the tumour was extremely inconsiderable, and it was fully expected that, as he recovered from the faint, more or less smart bleeding would ensue. After waiting for some time, however, none appearing, the great chasm which had been formed by the removal of the tumour was carefully packed with pledgets of soft lint, to each of which ligatures had been attached in such a way as to provide for their subsequent removal through the mouth. The flap formed of the cheek was replaced in its natural position, the opposing surfaces of the divided lip were brought into exact apposition by the hare-lip suture, and the remainder of the great cheek-wound accurately secured by numerous points of the interrupted suture.

It had been anticipated that, in the first instance at least, there would have been a tendency in the cheek to collapse or fall in, as a natural consequence of the great loss of substance, and the vacuum thereby caused in the seat of the tumour. All such apprehensions were unnecessary, as it was found that

the tendency of the replaced cheek was altogether to preserve even still more than its natural convexity; a result which followed from the great redundancy of material which had been produced by the stretching of the cheek over the tumour, aided by the elasticity of the parts, which served to preserve much of their original conformation.

The membranous part of the hard palate had been divided just behind the alveolar ridge, and it was inclined at first to flap up and down somewhat awkwardly, so much so that it was proposed to pass a ligature through its free edge, and fix it by bringing it out between the lips of the transverse incision, and then keep it secured on the cheek as long as might be necessary. The idea, however, was abandoned, and the expedient found afterwards to be unnecessary, as the membrane shortly became rigid from the effect of inflammation, and assuming the horizontal position of its own accord, continued to retain it, and did not cause any further inconvenience. The velum palati and uvula were undisturbed, and preserved their natural position.

The patient was greatly prostrated by the immediate effect of the operation. After having been left for some time in perfect quietness upon the mattress on which he had fainted, he was carried on it to his ward and laid on his bed, without allowing him to change his position, or make the smallest exertion. He had been very liberally fed in the morning, and for several preceding days, in order to prepare him as well for the severe trial he had to undergo as for the abstinence which must necessarily follow it, in consequence of the condition of the mouth and fauces sure to be left by the several steps of the operation. He did not seem to stand, therefore, in need of any immediate nourishment. An assistant was left in charge, with orders to allow no strangers near him, and to observe the most perfect quietude.

He was visited again at 6 o'clock P.M., and appeared to have been going on, during the interval which had elapsed, very satisfactorily. He was free from pain, conscious, and able to make himself understood, but still completely prostrated by the shock of the operation. There had been but little reaction; but, what was most satisfactory, there had been no hemorrhage, nor was there any appearance of any tendency to it. As there did not seem to be any occasion for interference of any kind, he was left undisturbed, with orders, as before, to observe quiet, and avoid everything which could excite or disturb him.

10 o'clock P.M. He was visited again. He was free from

pain and there was no appearance of hemorrhage. There had not been much reaction, but he seemed uneasy and restless. An anodyne enema was ordered, with one drachm and a half of tincture of opium, with the view of getting him a good night's rest and tranquillizing the system.

November 3. The morning after the operation. Had passed a tolerably good night; got some sleep; was free from pain; able to swallow some milk; no appearance of hemorrhage; on the whole, going on favourably.

Afternoon of same day. Pulse had risen to 120, and there was a good deal of restlessness and uneasiness; he was now ordered an enema with one drachm of tincture of opium. It is scarcely necessary to observe that the state of his mouth precluded the administration of medicine in any other form.

4th. Had a favourable night; system much tranquillized; doing well; has taken milk and also broth, without much inconvenience; not much incommoded by the discharge from the mouth and nostrils, although he lies, as yet, altogether on his back; two of the needles confining the upper lip were now removed; the lower one was still left undisturbed; he was ordered a repetition of the opiate enema at night, as it was considered most desirable to secure him rest, and to keep up a tranquillized condition of the system, if possible.

5th. Doing well. Had a good night; several sutures were now cut and removed, as a great part of the wound had healed by the first intention; appears more himself, and to be shaking off the great prostration which followed the operation, and had scarcely abated until now. The bowels had not been moved at all since then, and, with the intention of at once stimulating them and conveying nutriment to the system, he was ordered an ample enema of strong broth and olive oil. This acted satisfactorily, while a considerable portion was retained. He got his anodyne enema at night, as it was not thought judicious to withdraw its sedative influence too suddenly.

6th. Doing well; had an easy, tranquil night and a good deal of sleep; is much pleased at finding he can sleep with his mouth shut, as the passage of the nares, which had been occluded for many years, is now permeable by air; pulse down to 84. The last of the hare-lip needles was now removed, and some of the other sutures also taken away.

7th. Rested well. Suppuration from the mouth more profuse. Some of the lint pledgets, which were becoming loose, were now removed. No hemorrhage. He is able to take a fair proportion of milk and strong broth. As his bowels had not been moved since the 5th, he was ordered to have a repeti-

tion of the enema of strong broth and olive oil, to be given with the long tube, as before.

10th. Has been progressing very favourably. Sleeps without any anodyne; is not much incommoded by the discharge from the mouth; is able to get down a fair quantity of nourishment, and takes egg and crumb of bread mixed with his milk and broth. Some more of the lint pledgets have been removed. Pulse down to 76. He was now allowed to sit up in bed.

14th. Doing well. In good spirits, and able to express himself more intelligibly. All the sutures, and most of the lint pledgets, have been removed. He was now allowed to have, in addition to his other diet, some meat finely chopped.

16th. Progressing favourably in every way. The last lint pledget was about this time removed; although a very large cavity remained, there was no collapse whatever of the cheek. Most of the external wound, with the exception of one small piece on the side of the nose, had long since united by the first intention. He expressed a wish for more to eat, and the full diet of the hospital, with extra bread and milk, was at once ordered for him.

From this out, until his discharge from hospital, he went on without any change or symptom deserving of notice. The suppuration from the parts within the mouth, which had never caused him any extraordinary inconvenience, was now moderate, and gradually becoming less. The small spot on the side of the nose, which suppurated, and was the only part of the external incision which refused to unite by the first intention, healed rapidly, and left scarcely any mark even at this early period. The nose, which had been pushed so much to one side, was rapidly regaining its proper position, along with its symmetry. Of the primary incisions there was little trace; the chasm corresponding to the seat of the tumour was still large, but rapidly filling up by granulation. The membranous remains of the hard palate retained the proper position, and was daily stretching over to meet the cheek, in such a way as promised to leave but little deficiency of palate at last. His articulation was gradually improving also, while he could swallow either solids or fluids without any difficulty or regurgitation. But what seemed to gratify him most of all was the ability to sleep with his mouth closed, a luxury which he himself said he had not been able to enjoy for many years before the operation.

This patient returned home early in December by his own desire, in perfect health and wonderfully improved in appear-

ance. At this early period there was very little trace of the extensive incisions, which were unavoidable in order to remove so large a tumour. The left side of the face was still more convex than natural, but as interstitial absorption proceeded, it was daily approaching more nearly to its natural proportions and position, and promised soon to betray but little vestiges of deformity or operation.

The tumour, which is irregular in its form, measured, in its longest diameter, $3\frac{3}{4}$ inches; transverse diameter, $2\frac{5}{8}$ inches; height, from level of palate to apex of the most anterior and highest part, $3\frac{1}{4}$ inches[a]. Such are the actual measurements. When divided in its longest axis it proved a perfectly solid mass, varying in consistency, the anterior portion, which constituted the greater part of it, and which might be regarded as the body, presenting to the naked eye the appearance of a cartilaginous nucleus surrounded by a bony case. The posterior part, which is very irregular in shape, and which had to be removed in detached pieces after the tumour had been broken by the efforts made for its removal, does not amount in bulk altogether to more than about one-third of the anterior or body. The mass is evidently not homogeneous, and this part, which in some degree looks like a process, or congeries of irregular processes from the back of the tumour, is much harder than any other part of it, and harder than bone, turning the point of a very hard drill, and conveying the idea of a gritty material. There is no evidence traceable to determine from what particular point the growth originated, though it was very palpable that it had a decided tendency or inclination toward the mesial line, and the regions beyond it, notwithstanding the greater resistance it must have met with in this direction. It is not easy to reconcile the difference of appearance, form, and composition, between the anterior and posterior divisions of the tumour, with the supposition of a simple deposit or growth gradually expanding the antrum, or to believe them to have been the product of the same process or morbid action. In the anterior mass traces would seem to exist of a bony shell distended by a horny or cartilaginous nucleus, becoming less consistent toward the centre; but this peculiarity of construction, which anteriorly is so well calculated to suggest an abnormal deposit gradually distending the antrum maxillare to an unnatural and inconvenient size, becomes indistinct as we proceed backwards until all traces of a primary wall or case is lost, while the composition of the mass sensibly changes, but

[a] See Plate.

without any line of division or demarcation, the one running confusedly into and being amalgamated, as it were, with the other. It was at first conjectured that the back wall of the antrum had been absorbed in consequence of the pressure exercised by the growth or deposit within its cavity, and that on its removal the deposit had, as it were, broken loose, adapting itself to the varying resistance of the contiguous parts, and thus accounting for the irregular and nodulated appearance of the hinder part of the tumour. This supposition, however, would entirely fail in accounting for the marked difference of composition between what would seem to have been the true original tumour and the growth, so different from it, yet so firmly attached and identified with its posterior boundary. The only explanation of this which would appear at all consistent or satisfactory is perhaps that given in the description of the microscopical character of the disease which follows:—

The tumour having been presented to the Pathological Museum of the Royal College of Surgeons, Dr. John Barker, the Curator of the Museum, examined the different parts of it under a microscope of high power. A copy of the details of the examination, as they were obligingly furnished by him, is annexed, viz.:—

"The anterior portion, forming the bulk of the tumour, is enveloped in a casing of true bone. It is very friable and granular, and exhibits a bony cellular structure, like that presented by a collection of hollow oil globules compressed together, but rather more irregular and oval in form, about 1–300th of an inch in the long diameter. The walls of these cells are made up of closely packed cellules 1–2000th of an inch in diameter, and more angularly irregular, and flat; no true bone cells to be found; and no distinct indications presented by polarized light.

"The posterior portion of the tumour is of a very dense nature, hard, and structureless, even when examined by a power of 600; without bone cells or arachnoid lines. When examined by a power of 400 with the polariscope, it shows a structure somewhat similar to that of horn or ivory, and gives me the idea of having been developed, under great pressure, in a conchoidal manner. On the whole, I think the anterior portion was not malignant; and the posterior part I look upon as a protecting effort of nature, to prevent the ingress of the tumour on the brain."

Whether Dr. Barker's ingenious suggestion be correct or not, it is certain that a very remarkable difference is apparent between the structure and composition of the anterior and pos-

terior portions of the tumour, while it is impossible to assign any line of demarcation between them, so thoroughly do they seem to be identified at the seat of juncture. It would seem probable, too, that this posterior part was not secreted, or deposited from behind, as, on dislodging each of the nodulated processes which terminated it on that side, it came out with a smooth and glazed surface, leaving a cup or bed of corresponding appearance[a], and giving the idea of a ball-and-socket joint. Its identification with the back of the tumour would suggest its origination in that quarter, while the marked difference of its composition and nature would contra-indicate it. It only remains, then, that it must have been deposited from the vessels of the surrounding parts; and if we accept the suggestion of Dr. Barker, which seems to acquire probability from examination and consideration of the subject, we must consider it as a very beautiful instance of the prophylactic powers of nature, exerting themselves to make timely provision for a danger while it was yet at a considerable distance.

Before concluding the account of this operation it may be allowable to state, for the assistance of those who may hereafter be called on to undertake it, the experiences of the operator, so far as this one case was concerned, and his reasons for selecting the mode of proceeding which was adopted.—First, with respect to tying the carotid artery as a preliminary step, although some of the early operators considered it necessary, the experience of many cases has now shown that it may be safely dispensed with, and that it can scarcely be required in any case in which the operation would be justifiable. The actual evulsion of the superior maxilla is not attended with the hemorrhage which might be naturally anticipated from a knowledge of its anatomical relations; but this is the only hemorrhage that need cause any solicitude, as that arising from the division of the superficial parts is under easy and immediate control, and presents no difficulty to the surgeon. In the case which has been recited, the hemorrhage occurring at this stage was, comparatively speaking, almost nothing—but this was probably to be accounted for by the slow growth of the tumour, its dense consistence, and the pressure it exercised on the surrounding parts, which probably may have had the effect not only of compressing, but even obliterating, many of the vessels with which we know that region is so profusely supplied, and which must otherwise have given more or less of trouble. It is not meant, then, to establish any rule on the

[a] The nodule which brought away part of the sphenoid bone was an exception.

circumstances of a single case, which might itself be exceptional, but merely to corroborate the testimony of practical surgeons as to the inexpediency of a measure in itself attended with no inconsiderable severity and risk. Pressure, styptics, exposure to the air, and, when indispensable, the actual cautery, have been found sufficient to command the worst hemorrhage which has as yet occurred in these cases; and when we consider that both upper jaws have now been removed in many instances, without tying a carotid, and without fatal or uncontrollable hemorrhage in any one of them, it does not appear that the tying of that vessel can be necessary as a preliminary measure in any ordinary case.

With respect to the best mode of commencing the operation or the denudation of the bone, as several different methods have been proposed and severally adopted by different operators, it may not be amiss to say a few words here on their respective merits. An indispensable consideration in every case must be the securing of sufficient room, not only for the removal of the tumour, but for getting conveniently at its osseous connexions, so as to separate them readily and effectively, and in every case the operator must be guided in the selection of his plan by the circumstances of the case. The inclination of the growth may and does vary; in some, as in the case just recorded, being inward towards the parts beyond the mesial line and upwards; in others, outwards or downwards, and sometimes, at the same time, in both these latter directions. Accordingly, we find different operators making the primary divisions of the cheek in various ways on different occasions. It would not, perhaps, be possible to predicate absolutely that any one of these is the best; but we may conclude fairly that each chose on each particular occasion the plan of operation best suited to the case he had to deal with. As some of the methods which have been used seem under ordinary circumstances to present advantages over some of the others, the several modes of denudation which have been resorted to may be cursorily noticed here, according to the classification adopted by Dr. Heyfelder in his essay already alluded to.

Having remarked that the operation consists essentially of two acts, first, the denudation of the bone, and secondly, the division of its osseous connexions, he divides the first into three principal methods, subject to modifications, and these he enumerates as—

1. The median incision, from the roots of the nose through the middle of the upper lip.

2. The posterior lateral incision, from angle of mouth to outer angle of eye.

3. The anterior lateral incision, from inner corner of eye round wing of nose and through upper lip.

These have been sometimes variously combined, where it was necessary, from the nature of the distortion, to obtain great room. Occasionally, where only one of them was used, transverse incisions were combined with them, sometimes toward the angle of the eye, sometimes toward or over the zygoma, and sometimes transversely and parallel to the fibres of the orbicularis palpebrarum, the intention being in each case to obtain the utmost possible room with the least possible mutilation.

The mode of denudation which was chosen in the case which forms the subject of this communication, and which, with some modification, corresponds with that distinguished by Dr. Heyfelder as the "anterior lateral incision," was selected from an impression that it not only was the most suitable to the case in hand, but that it presented several advantages over the median and posterior lateral incisions. First, it promised ample room for the removal of the diseased mass, which proved to be the case; then the cicatrices resulting from it, falling to a great extent into the line of natural folds and hollows, are likely to be to that extent concealed, as in the case of the transverse elliptical incision, which corresponds with the natural rugæ of the lower palpebra, and is not at all conspicuous; and that round the ala of the nose, which is completely hidden from view. The remainder of the incision, on the side of the nose and through the upper lip, healing for the most part by the first intention, can scarcely be said to leave a cicatrix, and the little that is visible after the operation in a few years or months becomes almost obliterated. By this mode of section, too, the division and injury of very important parts is avoided; the facial vessels and ramifications of the portio dura nerve, save their extreme terminal branches, escape division. Hence hemorrhage is avoided as well as delay, since no vessel will require to be tied, while at the same time the deformities likely to arise from division of the portio dura nerve will be avoided. The facial muscles also escape division, and the natural expression of the countenance and correspondence of the opposite sides of the face are preserved. These are important considerations, and seem all in favour of this mode of effecting the denudation of the bone, where circumstances allow of the posterior lateral incision being dispensed with.

The division of the zygomatic arch can be accomplished by

a strong forceps. The arms should be long, and the application of a good deal of strength may be requisite, but it is preferable to using the saw, which must be much more distressing than the steady action of the forceps, which accomplishes the object without tearing or shaking the patient. The mallet and chisel, which have been used by some, particularly in the earlier cases of the operation, ought surely to be discarded. They are unworthy of modern surgery, must increase the amount of violence necessary, while it is scarcely possible to conceive circumstances in which they could not be replaced by more scientific and equally effective instruments. In separating the membranous part of the hard palate from the bone an advantage will be found in incising it immediately behind the alveolar ridge, and not, as has been recommended, farther back, near the junction of the maxillary and palate bone. It will no doubt flap up and down at first, an inconvenience which might be obviated by passing a ligature through it and securing it in such a way, before laying down the cheek, as to entirely prevent this inconvenience. But this will scarcely be necessary, since in a very short time inflammation renders it turgid,—it becomes stiff, resumes the horizontal position, and gives no further trouble.

In the case which has been detailed chloroform was not given, for the reasons which have deterred most surgeons from using it in this operation. To prevent in somewise the flow of blood backwards and through the fauces, the patient must, as long as possible, be kept erect. Accidents from chloroform have been said to be most frequent in the erect posture, and reasons have been given for always placing the person to be subjected to it in the horizontal position, as being safer and less liable to casualty; but beyond this, were the blood to flow backward (as more or less certainly will), while the patient were in a state of insensibility, it might flow into the larynx and windpipe, and, the sensibility of these parts being for the time suspended, suffocation might ensue. This contingency is considered by some improbable, but it is possible, and undoubtedly the interests of the patient, as well as those of surgery, require that it should be strictly avoided.

In some of the cases of this operation, already on record, the patient is represented as being up and walking about on the eighth day, and leaving hospital proportionably soon. In the case just recited the patient, though a remarkably strong and healthy young man, did not rally from the immediate effects of the operation for three days. He lay in a state of semi-stupor, listless and passive, and, as he himself afterwards

described his feelings, "stunned" by the operation. After the third day, however, he came to himself rapidly, became cheerful, soon asked for more food, and about the tenth day expressed a desire to be let out of bed. He was not allowed up, however, until the twelfth or thirteenth day, and was not permitted to return home until nearly six weeks after the operation, although he certainly might have left hospital with impunity a good while before that period. He had, however, a long way to go, and it was considered desirable to keep him within view as long as possible.

July 7, 1858. He has been seen on this day. The symmetry of the face is excellent; it requires sharp inspection to detect the cicatrices. The chasm left by the tumour is nearly filled up by granulation; the palate approaches nearly to the lip; both nares are open, and articulation is very good and intelligible; deglutition perfect, save that, if he were to take a *large* drink, he would be liable to some regurgitation through the nose. There is no appearance of any re-generation of the morbid growth. His health is excellent, and his entire aspect betokens a sound diathesis.

On the whole, the result of the operation has been most satisfactory.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Pathologische Physiologie: Grundzüge der gesammten Krankheitslehre; in Zusammenhange dargestellt. Von Dr. G. A. Spiess, prakt. Arzte in Frankfurt A. M.

Pathological Physiology; or, a Sketch of Pathology in general, arranged in a connected form. By Dr. G. A. Spiess. Frankfort on the Maine: Meidinger, Son, and Company. 1857. Large 8vo, pp. 1129.

It has been generally acknowledged, and very frequently expressed, so frequently indeed as almost to require some apology for its present repetition, that at no former period of its history has medical science experienced so great a change as that which has been brought about during our own times. It were easy to admit that this gradual revolution has been working its way, and extending its operations, through every department of medicine with an all-absorbing interest; and yet, in order that one should realize the entire bulk of this gradual change, and feel and know thoroughly the importance of its principal features, he should, as it were, visit the old schools, and pass in imagination through the entire progress of development which has been effected during the last thirty or forty years. A careful survey of the results which have been developed within this period will, perhaps, exhibit to view a series of more varied and important enrichments in the diagnostic and therapeutic departments, than in the strictly pathological; not that there has been a lack of advancement in respect to the latter, but, comparatively speaking, the improvement which has accrued to the history of morbid processes appears to have been hardly commensurate with that observed in the former, at least until within comparatively few years.

As all sciences have had their origin in practical life, it may be supposed that Medicine, so far from forming an exception

to the rule, was originally simply a practical or applied science, and, according to its nature and designation as a healing art, might have remained even down to our own times an applied science *par excellence*. There arose within it, however, the pure scientific and theoretic spirit of inquiry, that restless element which is so deeply grounded in the nature of the human mind; and, even at an early period of its history, the prevalence and spread of this feeling could be observed, and its influences traced. Having once commenced to operate, its diffusion became the more active in proportion as the science itself advanced through its gradual stages of development,—in fact, according as the experience of physicians increased in the richness and variety of its contributions, and as they themselves learned to apply the advantage of this experience to the improvement of medical principles, as well as to the furtherance of the auxiliary sciences. As a necessary result of this obvious experience, more and more universal laws came at length to be gradually abstracted, in relation not only to organic life in general, but also to the nature, origin, and progress of diseases. Medical science having in this way attained a certain degree of development,—in truth, as soon as the theoretical, thus gained, had advanced to a certain maturity or completeness, the time at length had arrived for the collection and aggregation of the scattered materials into one scientific whole, a systematic unity; and thus we may suppose to have originated the theory of medicine, or general pathology, as a distinct or special doctrine. But no system can be said to be so complete as not to become, after the lapse of a certain time, obsolete; indeed, this condition is impressed upon it by the very nature of progress, for in proportion as new facts become arranged, and new principles established, the older doctrines, however valuable they may be as historical materials, must cease to possess any practical interest; they must be, as it were, once more resolved into their several elements, so that the more fixed and substantial of these may contribute again as part of the material for another scientific structure, while the more volatile and visionary become dissipated in the process of dismemberment. It were foreign to our design to pursue and trace the historical development of our special science in all its particulars during the three great epochs of its existence, characterized respectively by the prevalence of materialism at first, of idealism afterwards, and of vitalism in the most recent period. Suffice it rather that we give a fair and impartial sketch of the comprehensive and elaborate work at present before us, that we endeavour at least to indicate some of the results therein detailed. In the ar-

rangement of these volumes the author tells us that he has "laboured for several years, with a view of bringing into a synoptical aspect, for the improvement of his own knowledge and information, the daily increasing results of individual pathological inquiries." Truly, in a time when special investigations and their results are becoming accumulated to an immense extent and in almost endless variety, the endeavours made by the author to sift and arrange them into one comprehensive grasp, as he has done in this work, will be the more acceptable the more the experiment has hitherto been unattempted by continental writers; and in so far, the present work will doubtless supply an essential desideratum in modern medical literature.

In its general disposition the work may be considered as a sort of cyclopædia of pathology, and is divided into three books, in which are successively arranged the elements or general principles of—(1) phenomenology, (2) etiology, and (3) nosology, —the therapeutic element has not a place here. The first two books treat of the simple elements of diseases, their phenomena, and the diverse conditions of their accession; while in the third are set forth the general laws which appear to exist in relation to the accession of diseases, deduced from the experimental or empirical facts detailed in the two former divisions. In dealing with a work like this, which in its nature is essentially different from a treatise embodying the exposition of individual opinion, it is difficult to condense from any part of it such portion of the *materiel* as will come within the grasp of criticism, or furnish even a convenient extract,—so dependent is each paragraph on those immediately preceding and following, and all the parts are so dovetailed one into another. Indeed, in so large a work we should have desired to see at the end of each chapter or section some kind of concise recapitulation or *resumé* of the leading features treated of therein, if it were only for the convenience of reference. A help of this kind, especially to those reading a work in a foreign tongue, could not fail to be generally appreciated, and would enhance its value as a book of reference, when it is considered that the subjects are arranged, not in alphabetic order, but according to a plan which by reason of its very comprehensiveness is sometimes deficient in clearness. We should also have wished to see, either in the text or in foot-notes, a due space alloted to the names of those who have severally aided in the advancement of our science: a reference to men and their works is always of use, if it were only to serve as furnishing landmarks, as it were, in the history of opinions, discoveries, or contributions. For this latter

omission, however, we must give the author's own apology. "It is to be hoped," he writes in the preface, "it will not be taken in bad part that I have brought forward no literary history, and that in connexion with the several subjects I have not mentioned the names of those men to whom we are indebted for some of the important additions to our knowledge with regard to them. I acknowledge completely the obligations under which I am placed of preserving to each his well-earned property, namely, the honour of having furnished a substantial contribution to the advancement of our science. It is a question of the *history* of science to estimate these services according to their several merits; and in the monographic working out of an object, it is understood of itself that one should unite therewith also a historical representation of the investigations connected with it. Where, however, on the contrary, as in the present case, the matter in question is, how to place together, in a comprehensive view, those results of inquiries which have already, as it were, become the public property of science, it would have been attended with no advantage were I to refer by name to all the works, and the numberless articles dispersed throughout the several journals, in which the most important improvements and discoveries of modern times have been first published; and further, in this way the bulk of the present work might easily have become inconveniently augmented, a matter which is worthy of consideration when we know that there is no lack of hand-books in which a full measure of consideration is given to the literature of our science."

We pass over that part of the first book which treats of diseases depending on derangement of the brain and the cerebral nerves, and turn to the second section—phenomena of disease arising from abnormal action of the spinal nerves. Here we have, as in the other sections of the work, a number of diseases arranged or grouped together in classes, and considered with reference to their several manifestations, thus—1st, morbidly exalted and abnormally excited motor energy, evinced in cramps, convulsions, &c.; 2ndly, morbidly diminished and completely arrested motor energy, as in the various forms of paralysis; and 3rdly, motor disturbances, depending partly on exalted and partly on diminished energy, among which are placed muscular contractions and tremors. We find, for example, among the first of these divisions, placed together for examination, tetanus, chorea, and hysteria, regarding the causes of which even the opinions of the most experienced and sagacious observers amount only to conjectures more or less vague

and undefined; this cannot be otherwise, whilst the proximate cause, the intimate nature of these forms of spasm, that is, the morbid change in the spinal cord itself, on which appears to depend the peculiar rigidity of the muscles in tetanus, the extraordinary origin and diffusion of the muscular movements in chorea, as well as the somewhat similar condition of the reflex movements in hysteria, remains comparatively unknown. Indeed, after much observation we may be said to have only as yet learned to know the individual movements which are wont to precede or accompany these several forms of spasm, and of which we may just assume that they stand in a certain relation to each morbid change of the spinal cord; while it must be left to later inquiry to point out, by the discovery of one or more missing links of the chain, the actual relation and the kind of connexion which subsists between the remote causes and each peculiar manifestation of spasmodic disease. On the causes of the several affections just spoken of, we give the author's remarks in full:—

"Tetanus most frequently appears to arise from causes which are local and peripheral, from injuries and wounds; but it has hitherto been impossible to follow the concatenation of individual incidents, by which such injuries eventuate in this peculiar affection. Endeavours have been made to account for the supervention of tetanus upon injuries in some cases by a consideration of the peculiar nature of the part of the body injured; but it is not always the same kind of parts, whether muscular, tendinous, or highly endowed with nerves, in which wounds are found to induce tetanus. This sometimes succeeds to very trivial wounds, and is on the other hand by no means frequent after wounds in general of whatever kind, so that we cannot conceive that, in order that a wound should induce tetanus, some peculiar circumstance should be added, be it even a complication of the wound or something special in the nature of the latter. It is a well-known fact that a tropical climate predisposes to a peculiar kind of tetanus, but in what manner, or by what changes dependent thereon this happens, has not as yet been investigated. In some cases of traumatic tetanus, the nerves proceeding from the injured part have been found in a state of inflammation; but were even the invariable occurrence of this established, it would yet remain to be shown how the disease arises from such an inflammation of the nerves; for here we have to deal, not with an excitement of the spinal cord, but with the operation of a determinate form of spasmodic affection, and one, moreover, not depending on peripheral irritation. But that a certain relation subsists between such a

wound and the spasm which supervenes, and which, in fact, is brought about by the nervous connexion of the injured part with the spinal cord, is evident from this, that in some cases at least the removal of the disease after it has broken out has been effected by the mere division of the connecting nerves. Among the remote causes of tetanus, particularly of that partial form of spasm, trismus, a rheumatic condition of the system has also been enumerated; it appears that in some cases the application of cold has decidedly predisposed to the occurrence of tetanus; but it has not yet been explained in what manner or by what means tetanus and trismus arise in such cases; while, as regards the so-called rheumatic process, its intimate nature is almost as little known as that of tetanus.

"*Chorea* occurs almost exclusively in the age of childhood and youth, while the process of growth is rapid. Frequently in chorea one of the cervical vertebræ is found to be tender and painful, and although on that account the inference is by no means to be drawn that congestion or inflammation at the place indicated was the efficient cause of chorea,—whilst from such causes, perhaps, the origin of cramps in general, but not of this peculiar form of spasm, might be explained,—it remains still probable that a certain abnormal, perhaps too rapid or disproportionate development of the dorsal vertebræ, which may easily be accompanied by congestion, co-operates in some way as a powerful causative impetus to its production.

"General debilitating causes, previous diseases, onanism, and the like, to which a great importance has been attached as causes of chorea, have an influence only on the general bearings of nervous diseases, by inducing or keeping up a greater excitability of the whole nervous system, nevertheless without affording sufficient reason why disease should assume this form in particular. The causes of the partial forms of chorea, such as cramps of the fingers, the so-called writers' cramp, and certain kinds of stammering, are not less obscure. The latter may frequently have its origin in mental excitement. Finger cramp, on the other hand, and writers' cramp, appear chiefly to result from an excessive and prolonged effort of some one kind, as we see them only in those who have employed their fingers either in writing, or some analogous constrained movements within narrow limits.

"*Hysteria* finally is by far the most frequent of the forms of spasm arising from morbid constitution of the spinal cord, and accordingly, its causes must be of more extensive and frequent occurrence. In fact, everything which tends to debilitate the body generally, and the nervous system in particular, thereby

inducing a proneness to excitement, appears to lay the foundation of reflex spasms. The peculiar character, however, and the unusually wide diffusion of the varied forms of spasm exhibited in hysteria, appear to stand in a special causal relation with a defective activity of the brain, with a diminished energy of the higher faculties of the mind, and chiefly of the will. According to this view, hysteria receives an essential elucidation from the well-known experiments with decapitated and narcotized frogs, in which the dominant influence of the brain upon the spinal cord is arrested, and in which, therefore, the smallest peripheral excitement, even slight touches upon the skin, are sufficient to induce vigorous and widely diffused reflex spasms of all the voluntary and many of the involuntary muscles."

We pass on now to the second book—the etiological portion of the work—which is subdivided into three comprehensive sections, viz., 1. The changes of organic form and combination as conditions of morbid vital actions; 2. Vital energies considered as conditions of diseased action; and 3. The operations of external agents as conditions of morbid processes in the system. In casting a glance over that portion of the work comprised in the lengthy chapter on the morbid changes of the blood and lymph, in order to place together in review some of the principal results of the author's inquiries, it should first of all be stated that he considers a true and general polyemia, an absolute increase of the collective mass of the blood, to be as yet incapable of direct demonstration, however probable in many respects its existence may be—at all events, that it can never attain to any considerable height; whilst the opposite condition of oligemia, an absolute diminution of the circulating mass, takes place very frequently, and in all degrees. As regards the *quantitative* variation of the several constituents of the blood, the amount of water may likewise be absolutely either increased or diminished, although both these changes are almost always transitory and evanescent; an absolute increase of the blood corpuscles alone, on the contrary, and even more so of the albumen, is not only doubtful, but very improbable, while an absolute diminution of both these most essential constituents of the blood is a fact of certain and frequent occurrence, and moreover, an important cause of many morbid phenomena. In this respect the fibrine is differently circumstanced, this element being found in some diseases to be often in a high degree absolutely increased, while also it is by no means unfrequently absolutely diminished, although in a less proportion. The salts of the blood, which stand in most inti-

mate relation to its chief essential organic constituents, the blood corpuscles and the albumen, appear like these, and with these, to undergo no absolute increase, but frequently suffer a considerable diminution; whilst the fats, which he looks upon as mere casual admixtures, appear to be subject to considerable fluctuations. Of the alterations of the so-called extractive of the blood, nothing definite or satisfactory is announced, and the changes of the gaseous contents, i. e. oxygen and carbonic acid, are in a similar predicament.

Qualitative variations are described as being known as yet with regard to two constituents only, viz., to the blood corpuscles (partly based on facts, and partly rendered probable by their deportment in the blood after its withdrawal from the vessels), and to fibrine (shown by its diverse modes of coagulation); but regarding the conditions as well as the casual consequences and effects of these qualitative variations, considerable obscurity appears to exist. Further, in respect to the foreign matters which occur in the blood, the dyscrasiæ arising from a retention of the essential constituents of bile and urine, as well as of sugar in the blood, may be looked upon as fully established by undoubted facts, notwithstanding the uncertainty which attends their origin, not less perhaps than their effects. Of much higher import, however, is that of pyemia and putrescence of the blood, which become the essential causes of the different forms, or rather species, of fever, especially the acute exanthemata, typhus, intermittents, &c. Indeed, we are justified or even constrained by the present state of knowledge to recognise such changes; as regards, however, their peculiar nature, we can form but vague conjectures, nor are their causes or their proximate effects quite understood.

"It must appear almost incomprehensible," the author says, "considering the defective state of knowledge regarding the morbid changes of the blood, that at a very late period some have believed they could explain, not perhaps the individual morbid phenomena, but entire morbid processes, by a reference to such blood changes alone, and that they were able to found their entire pathology upon the comparatively uninvestigated doctrine of the dyscrasiæ. Nevertheless, this has happened very lately, and in a school to which we are indebted for the most varied and copious results of strictly experimental investigation, and which in other respects insists on a purely empirical management of pathology, but which, forsooth, confused by the ontological views of more recent times, and attaching a partial value to the results of pathological anatomy, has laboured in no very equal measure to resolve the incidents of disease

so far into their individual elements as appears to be indispensably necessary to an accurate knowledge of them.

"The transient intoxication of this latest Doctrine of Crases (Krasenlehre) having already given place to a more sober comprehension of things, its bewildering effects, nevertheless, are not yet so completely overcome as to render a critical examination of some at least of its fundamental defects quite out of place. This newest Crasiology errs, for instance, in this, that in its interpretation of the morbid incidents of life, it gives too wide an extension and attaches by far too much importance to the blood-changes; that it assumes and supposes numerous changes of the blood, numerous so-called crases, of which all foundation in fact is wanting, and of which, therefore, in cases where only the actual proof was to be alleged, no account whatever could be given, and that it quite overlooks the various other and often far more important conditions of disease,—but in this also it errs, that it contemplates the morbid changes of the blood almost universally, as originating *primarily* and immediately from external, or else from inscrutable internal causes. It is an evidence of great presumption that the Vienna school has ventured to construct a new humoral pathology on the hitherto very inadequate knowledge of the morbid changes of the blood, as well as on those blood changes revealed by cadaveric inspection,—a pathology which for defectiveness is not surpassed by any of the older doctrines of the same kind; still further, there is evidence of greater self-sufficiency in the fact, that it does not make the least attempt, indeed it scarcely appears to feel the necessity, of searching after the nearer and more remote conditions of the sundry deviations of the blood from its normal state, but looks upon these, in short, as already existing, as arising spontaneously; and further, that from these the most varied morbid changes of the other parts of the body are to spring.

"From the foregoing investigations it has resulted, on the contrary, with more probability that, with exception of those dyscrasiæ (quite unknown in their nature, although necessarily supposed or assumed) which, being excited by contagions and miasmata, include the essential causes of exanthemata, typhus, &c., all other morbid changes of the blood—whether they consist in quantitative or qualitative deviations of the blood itself, or in the admixture of foreign matters therewith, essentially occasioned by preceding disturbances of vital actions—are more or less necessary consequences of the morbid conditions, and are not to be considered as primary and original, but secondary alterations. By this, of course, the dyscrasiæ lose

nothing of their significance as a condition of many and serious incidents of disease; but they proceed therewith only in the places in fact belonging to them, and become, with so many other morbid changes of the solid parts, equally essential features in the various, often very highly developed series of morbid phenomena, which are very frequently the effects rather than the causes of other phenomena, and in whose changing concatenation, as may be further shown, the concrete diseases originate. Hence also arises the indispensable necessity of investigating more attentively and assiduously these conditions of the morbid blood-changes; they are, however, as yet but very imperfectly understood, and only by degrees as we proceed further in these inquiries can we hope to attain a more intimate knowledge and perception of many other dyscrasiæ, whose existence we have sufficient grounds for assuming, although from want of accredited facts we are unable at once to adopt them as already established.

"With regard to the *operations* of the dyscrasiæ, the later humoral pathology has been guilty of the greatest errors. Just as the older ontologies regarded diseases generally as peculiar essences, which, being regulated and controlled by arbitrary laws, or even by mere caprice, called forth this or that phenomenon in the organism,—so also does the present humoral pathology assign to the dyscrasiæ the power of regulating and governing in the organism. All expressions of disease which originate in the existence of such a dyscrasia in the body are truly at the most only made conditional by it; and we view as an independent fact of the dyscrasia itself only this, that it admits of their proceeding from it. In this way an undisputed tubercular crasis gives rise to the development of tubercle in some one or more organs; a somewhat more doubtful albuminous crasis produces a cancerous tumour; the hydremic crasis induces dropsy, &c.; that is to say, in short, the crasis localizes itself,—although it is not said the crasis *is* localized,—and upon this *localization of the crases*, which plays a very important part in the new humoral pathology, several more or less arbitrary laws have been founded.

"Upon a more strict and circumspect consideration of the facts which have a comparatively real foundation thereon, the operations of the morbid blood-changes appear, on the contrary, in quite another light. A foreign matter arrived in the blood, or even originally arising within it, must by its nature operate upon the nerves and the other solid parts with which it comes in contact by means of the blood, just in the same way as if it had come in contact with the same parts by ano-

ther way. It is not on that account to be disputed, that it is but few of these foreign matters that can be said to have an elective affinity for certain textures and parts of organs, or, when present in the blood, should be attracted by these in a manner similar to that in which urea is attracted by the kidneys; bile is attracted, or at least arrested, by the liver; and that it is not in this way that foreign substances occurring in the blood could be capable of effecting any very determinate local manifestations. Unfortunately, however, we are not acquainted with any of these foreign matters, and therefore can know nothing about their casual affinities to this or that texture; moreover, we should only obstruct the way to our further comprehension of them, were we to accept as indisputable the local manifestations in typhus (for example), or in the acute exanthemata—which possibly may depend upon causes of quite a different nature,—had they their exclusive foundation in a particular affinity of the typhoid matter to the intestinal canal, or of the eruptive matter to the external skin or the mucous membranes, were they in fact mere localizations of the typhoid and eruptive crases. In like manner may an unusual richness of the blood in fibrine, perhaps rather a qualitative deviation of this element, give rise to coagulations and depositions of the same within the vessels, whether in the form of granulations on the heart-valves or of exudations on the lining membrane of the vascular tubes, or lastly, as obstructive coagulation in the smaller vessels; but here not only must the cause be looked for in the peculiar constitution of the blood, but, as in the former case, it was the peculiar chemical or other condition of the individual textures which arrested the foreign matters of the blood, so, here also are there certain local conditions of various kinds, through which the course of the blood is impeded, or the inner coat of the arteries is diminished in smoothness, which tend to bring about such fibrinous depositions, and which, when present in a greater degree, will produce quite the same depositions, even without any morbid change of the blood from its normal state as regards the amount of fibrine. In all other cases the local morbid phenomena which arise from dyscrasiæ are in much greater degree, and in more ways, dependent on local disturbed actions in the solid parts; the dyscrasiæ are here only joint conditions for the peculiar form under which the casual products of such disturbances appear. That pneumonia is not the localization of a supposed former hyperinotic crasis, but that inversely the hyperinosis is only the consequence and effect of the pneumonia, as of any other more violent inflammation, will be shown fur-

ther on, and thus it is also with every other inflammation. It cannot, however, be denied, that the product of pneumonia and every inflammation product, every inflammatory exudation, is essentially effected by the present constitution of the blood, and is capable, according to this constitution, whether considered quantitatively or qualitatively, of assuming a very different form; and herein lies the essential significance of the so-called dyscrasic inflammations. It is at all events very doubtful whether certain dyscrasiæ, perhaps by virtue of some affinity of peculiarly hostile substances to certain tissues of the body, can of themselves be considered as sufficient causes of inflammations; but no one doubts that an inflammation otherwise excited in a dyscrasic body, by virtue of the peculiarity of the original inflammation products, runs a peculiar course, and presents a peculiar character. As with inflammation, so also is it with other disturbances of the circulation, that is to say, the different kinds of congestion and the abnormities of secretion to which they often give rise. Never, perhaps, or at least very seldom indeed, are they originally called forth by an existing dyscrasia; but, having been excited by other causes, they may be kept up by the dyscrasia, and at all events their consequences are modified thereby. Thus also, an important polyemia may induce more vehement manifestations of local congestion, only on the condition that some parts of the vascular system offer less opposition than others, or that another cause existing out of the blood attracts this fluid stronger to one part than to another; but a congestion thus originating will be more persistent and severe during the existence of polyemia than under opposite circumstances. An absolute augmentation also of the aqueous constituent of the blood can of itself, during its continuance, only keep up a more active elimination of water through the kidneys, lungs, and skin; whereas an *effusion* of water into any other part of the body could only result from some obstruction to the action of those natural emunctories. A mere relative increase of the watery constituent, however, a hyperemia from diminution of albumen or of blood corpuscles, can of itself have as little effect in causing a dropsical effusion as in augmenting the secretion of urine. Should, however, a plethoric condition of the vessels of particular parts of the body take place, or an obstruction of the circulation in such hydremic dyscrasiæ from other causes, the result would be that the excretion of water would take place the easier, the poorer the blood is in solid constituents.

"Finally, this modern humoral pathology has played a most

arbitrary and unscientific part with the so-called metastasis (Umsetzung) of crases, and in this, as a necessary consequence of the entire doctrine, its fundamental errors may be most easily recognised. The substantial and accurate part of the doctrine consists in this, that the morbid blood-changes do not remain always the same; that they, as far as they are accurately known, become altered again in the course of the same disease, in fact even become metamorphosed into those of apparently or really opposite kinds. The erroneous part of the doctrine, on the other hand, consists in this, that this very metastasis of crases is looked upon too much as the mere localization thereof, and in fact as an operation of the dyscrasiæ themselves. Thus, for example, hyperinosis is said to change through separation of fibrine, as well as through exhaustion, into the opposite condition of hypinosis, and further into hydremia. But inversely the assumed dyscrasia of drunkards, distinguished by a deficiency of fibrine, also the typhus-crasis, is supposed to become changed into hyperinosis, and to give rise to genuine inflammation. The modern crasiology is naturally at a loss to account for these metastases; indeed, there is an evident contradiction in supposing that a separation of the fibrine, which is occasioned by an excess of this element, should continue even to the production of a complete defibrination of the blood. If, however, we adopt the opinion that the hyperinosis is only the consequence, and not the cause, of the inflammation, then may it be just as well conceived, how always according to the course of the inflammation a general impoverishment of blood and a true hydremia may follow thereon, as that even in typhus and among drinkers a true inflammation like pneumonia can originate from a sufficiently active inflammatory attraction. Other crasic metastases, among which the later appear to be only higher degrees of the earlier, as the origin of the septic crasis is from the pyemic, or even the typhoid and eruptive, may have their foundation with some possibility in the blood itself, and may be occasioned by the progressive influence or peculiar transformation of the morbific matter admitted into the blood,—although upon this nothing determinate can as yet be pronounced; but in them also we should not neglect the influence of other existing vital disturbances, and of the much deranged actions of the solid parts; at all events it would evince a great partiality were we to attempt an explanation of these sundry alterations which the constitution of the blood suffers in the course of deeply seated and protracted diseases.

"Nothing has contributed so much to throw suspicion on

the whole doctrine of the morbid blood-changes, and to lessen our interest in its investigation, as the exaggerations which have been used with regard to it from different sides. After the first surprising results which the investigations of the blood in disease afforded, some believed that the problem of a number of diseases was already solved, nor did they consider that they had only just entered upon an entirely new path in the field of science, which was to conduct to the most important discoveries, and which, while it promised fruitful consequences, presented at the same time many difficulties which at the beginning were hardly anticipated, or were at least not to be accurately estimated. And yet it was believed that in the blood alone we should seek the source of *all* diseases, this being the *fons et origo* of all normal formation, without considering that in the organism, when once developed, all its parts, together with their several actions, have a determinate state of reciprocal dependence one upon another, and that consequently nothing but a due estimation of this reciprocity can lead us to form an accurate judgment, either of the normal or of the abnormal morbidly altered phenomena of life and their conditions."

To attempt an analysis of the nosological treatise which forms the third and concluding portion of this work were unnecessary, inasmuch as its substance is essentially the same as that of the two preceding parts, differing from them only as to the method in which its materials are arranged and applied.

We trust that the extracts we have given may furnish some general idea of our author's mode of dealing with his subject. In conclusion, we feel assured that, notwithstanding the defects which we have pointed out as calculated to detract from the value of the book as a work of reference, our readers will find throughout Dr. Spiess' pages a large amount of practical information, which, however difficult it may be in some instances to arrive at, owing to the diffusiveness of the style, will, nevertheless, repay a diligent research. As a digest of the present state of knowledge, it must occupy an important place in the literature of modern medicine.

An Essay on Wasting Palsy (*Cruveilhier's Atrophy*). By WILLIAM ROBERTS, B. A., M. D. London, Physician to the Manchester Royal Infirmary, &c. With four Lithographic Plates. London: Churchill, 1858. 8vo, pp. 210.

THE absence hitherto of any distinct treatise in the English language, on the subject to which this essay is devoted, and the difficulty that had to be encountered in attempting the study of the disease, both from the papers which had been published on it being scattered through various journals, and from the necessity for eliminating the facts from the many erroneous inferences with which they were sometimes surrounded, caused us to give a ready welcome to a volume whose purpose was

"To bring together within a convenient compass, and in a convenient form, all the information the writer could lay hands on concerning this peculiar species of palsy."

We congratulate Dr. Roberts on the manner in which he has supplied the gap in English medical literature which he states it to be the ambition of his Essay to fill. The *completeness* with which he has investigated the subject, the variety of facts and cases he has collected and analyzed, the minuteness of the details, and at the same time the elegance with which they are described, along with the soundness of the views as to the pathology and treatment of the disease that he has inculcated, leave little to be desired, and induce us to cordially recommend the work to our readers.

Wasting palsy, or Cruveilhier's atrophy, in compliment to the eminent pathologist who, though not first in the field, has done most to elucidate the nature of the disease, are the terms, as not involving any theory, that Dr. Roberts prefers for designating the affection treated of—one which, short as is the time since it has taken rank among recognised diseases, is rich in names. Preceding writers, he says, endeavoured to square their nomenclature to the opinion they held as to the essential nature of the disease. Were he inclined to follow the same rule he would call it "*idiopathic degeneration of the voluntary muscles*," but as this is too cumbrous, and may not prove correct in the end, he has substituted the more homely name of "*wasting palsy*."

The volume is divided into ten chapters, of which the first is devoted to a rapid historical sketch of the disease, and gives an account of the opinions as to its nature held by the principal authors who have observed it. The second describes the general physiognomy of the disease. In it we have first de-

tailed, as typical cases, the five that came under the author's own observation; then the remarkable one of Prosper Lecompte, from Cruveilhier's second memoir to the Academy, read in December, 1855; and then that described by Dr. Thomas Valentiner. A vivid idea having been in this manner presented of the gradual loss of power and diminution of volume of certain groups of muscles constituting this peculiar form of paralysis, the chapter concludes with a table giving a summary of all the undoubted cases the author has been able to collect. Altogether they number 105. They are arranged, as proposed by Aran, into two groups, "*partial*" and "*general*," and, notwithstanding the imperfect manner in which some of them have been reported, they may, in Dr. Roberts' opinion, be confidently looked to as affording data for laying a firm foundation for the entire pathology of this curious malady.

The third chapter treats of the "*anatomical distribution and symptomatology.*" It appears that, of the 105 cases collected in the table, 60 belong to the partial and 45 to the general form; but Dr. Roberts has reason to believe that the partial form is relatively far more common than these numbers indicate; indeed, he says cases of atrophy of a limited group of muscles are within the experience of nearly every practitioner, while *general* wasting palsy is unquestionably a rare disease.

Sir Charles Bell believed that in this disease it was universally those muscles which were combined in action that were affected. To this, however, Dr. Roberts has found many exceptions; in several instances the triceps retained its full vigour when all the other muscles about the elbow had suffered destruction, and in the second of his own cases the extensor internodii pollicis continued active fourteen years after the other muscles of the thumb had vanished. Commonly, however, when the destroyer falls on a muscle, all its comrades are specially involved.

In no case yet published have all the muscles of the body been found implicated in the same individual; the muscles of mastication and those of the eyeball have not been yet known to be affected, and the muscles of organic life seem to be altogether free from its ravages. But the head has fallen forward on the chest, the limbs have hung lifeless, the tongue has failed, the voice has been reduced to a single note, the face has been expressionless, the still conscious mind only finding utterance through the movements of the eyes, till finally death has been brought about by the failure of the diaphragm and intercostals.

When the atrophy is *not general*, certain parts of the body

and certain groups of muscles are much more obnoxious than others to its inroads. Dr. Roberts has analyzed 60 cases of the partial form, and formed a table exhibiting the ratio of the liability to attack of the different parts of the extremities.

"The muscles of the trunk," he has found, "are less liable than those connected with the extremities, while of the latter the muscles of the upper limbs are far more liable than those of the lower. Of 62 cases in which the atrophy was either undoubtedly partial, or only faintly foreshadowed an extension to the trunk, the upper extremities were alone the seat of the malady 51 times, while the lower were exclusively affected only 5 times, and the upper and lower together only 7 times. The right arm is much more frequently attacked than the left, and the hands oftener than the shoulders. . . . . From the figures of this table flow the following additional conclusions:—That as a general rule, when one limb is attacked, its fellow on the opposite side shares its fate; that, when the disease is unilateral, the right side is more likely to be its seat than the left. This is especially the case when it invades the hands, but far less so in the upper arms and shoulders, and the distinction disappears altogether in the lower limbs."

Dr. Roberts also points out the capriciousness and uncertainty of the line of the attacks of the disease, but shows that while it has its favourite combinations, there are some that it habitually avoids,—facts of great interest in a pathological and practical point of view.

"The *symptoms* are considered under the heads of lesions of mobility, and of sensibility. The loss of power corresponds in the typical cases to the grade of the atrophy of the muscle; and inasmuch as the muscle goes on decaying slowly for months and years, its force declines at the same deliberate pace, so that it is only in extreme cases that any part is reduced to absolute immobility. More commonly the movements are still capable of being executed, but with so feeble a force as to be of no service to the individual. The correspondency here claimed between the bulk of the muscle and its contractile power is a distinctive feature of the disease, and serves to separate it in a marked manner from hemiplegia, paraplegia, facial paralysis (of Bell), and indeed from any palsy depending on an injury to the cerebro-spinal centre or a nervous trunk. In these latter the loss of power is sudden,—generally instantaneous, and seldom delayed beyond a few hours or days,—and the subsequent wasting of the muscles, if there be any, holds no proportion whatever to the loss of power; but here, as the degeneration advances *pari passu* the strength abates, and it is not altogether abolished until every fasciculus and every fibre is destroyed, while to the last the muscle remains obedient to the calls of the will."

In uncomplicated cases this holds true to the letter, but in

others it is not so manifest, and certain symptoms are observed which Dr. Roberts attributes to the reflection and radiation of impressions at the spinal centres.

Muscular vibrations are the most remarkable of the secondary or unessential symptoms. They were first observed in the famous case of Lecompte. They are rarely absent when active atrophy is going on.

"They make their appearance as little convulsive twitchings or quiverings of individual muscular bundles; they do not impart any movement to the entire muscle, but spring beneath the skin in quick momentary tremors, undulating over the surface of the muscle. . . . . An examination of the table of extracts shows that fibrillary tremors are not universally present even during the active stage. . . . . Nor are they altogether unknown in other palsies and muscular degenerations."

Cramps and twitches are next considered, but as occurring rather as complications than as forming an essential part of the symptomatology of the complaint; and Dr. Roberts confirms in a great measure the statements of Duchenne as to the electric contractility of a muscle undergoing Cruveilhier's atrophy, gradually dying away with the voluntary power, and not altogether failing until the muscle is annihilated.

As to *lesions of sensibility*, in uncomplicated cases there are none whatever. In some cases tactile and common sensibility have been slightly altered, and in others pain has been complained of, and also an unusual sensitiveness to low temperatures. And except the nutrition of the affected muscles, all the intellectual and organic functions are performed with the utmost regularity.

Chapters IV. and V. are replete with interesting and important details as to the invasion, course, duration, and termination of the disease, and the conditions of its origin and etiology. Over these we must pass, noticing only the greater frequency of its having its starting-point in the upper than in the lower limbs, and in the right than in the left, and the remarkable fact that when it begins in the lower limbs it has a great tendency to become general; and the fact that the general form seeks its victims among children, among adults, and in advanced age; whereas the partial form very rarely affects individuals under adult age, or over fifty. Sex and consanguinity, too, seem to exert an important influence. Of the 99 cases in which the sex has been stated, 84 were males, and 15 only females—a difference depending probably, as suggested by Dr. Roberts, on the greater and more sustained muscular

exertion which men's occupation demands—for it appears women working at certain employments are not much less liable than men who are engaged in kindred occupations. The influence of consanguinity is greatest in the general form of the affection. It is remarkable how frequently the proclivity passes through females to appear in their male descendants. Of the special determining causes, three are most important. Of 69 cases, 25 are attributed to hard work, in one guise or other; 16 to cold, or cold conjoined with wet; and 18 to hereditary predisposition. Other causes have been doubtfully put forth, as scarlet fever, typhus, rheumatism, syphilis, &c., but they seem to have been merely antecedent circumstances.

Chapter VI. is devoted to the post-mortem appearances. Hitherto all the instances of Cruveilhier's atrophy examined after death have been of the general type. The essential mischief has been always looked for, and found in the nervo-muscular system of animal life. The muscles are atrophied, and for the most part have undergone fatty degeneration, both in the interstitial and molecular forms; there is always, however, a great difference in the extent to which this change has taken place, not only in neighbouring muscles, but even in the several fasciculi of the same muscle. In some instances the degeneration would seem entirely granular, and at no time fatty; in others, fat is present in larger proportion, and sometimes it is exceedingly abundant, so that Meryon's designation, "fatty and granular degeneration," is the correct one.

The alterations found in the nervous system were by no means constant. The brain and medulla oblongata were free from disease in every case examined. In 9 out of 13 autopsies the spinal cord was sound, in some, even the microscope failing to reveal anything abnormal. Of the 4 in which morbid states were discovered, there was more or less extensive softening in 3; and in the fourth (Virchow's) there was amyloid degeneration. Great importance attaches to the condition of the anterior spinal roots, in consequence of Cruveilhier's observations. In his two cases he found them atrophied. Schneevoogt and Valentiner found them in the same state in one case each, along with softening of the cord; and Dr. Roberts quotes from Dr. Reade's very excellent description, published in this Journal for November, 1856, of the case that occurred in his practice, an allusion to a case that was examined in the Belfast workhouse, as the only further confirmation of Cruveilhier's observation. On the other hand, it appears that in five cases in which this alteration was specially looked

for, it did not appear. These are detailed by Dr. Meryon, in the Medico-Chirurgical Transactions; by Landry, in the Gazette Médicale; by Oppenheimer, in the same; by Virchow, in Virchow's Archiv; and by Laboulbéne, in L'Union Médicale. The existence of these five cases we believe, with Dr. Roberts, to be a fact of capital importance in the discussion of the pathology of wasting palsy.

In 6 cases the peripheral nerves were examined; in 3 the motor nerves were more or less atrophied, probably a secondary change. In 2 no change was found. In 2 the sympathetic in the neck was examined; in one, Landry could discover nothing abnormal; in the other, Schneevoogt found that part of the cord in the neck, the lower cervical and some of the thoracic ganglia, had undergone fatty degeneration, a condition that had been diagnosticated during life from the contraction of the pupil.

Having discussed the several points we have indicated, the author next considers, in chapter VII., the "nature" of the disease, and in doing so limits himself to the consideration of two questions: first, what is the precise seat of the initial lesion? and secondly, what is the proximate seat of that lesion? In answering these questions Dr. Roberts affords another illustration of the truth of the great principle we have often advocated in these pages, of the individual and inherent life of each tissue and element in the body.

"To the muscles," he says, "themselves, therefore, we must look for the primordial phenomena of wasting palsy. This opinion is held by Duchenne, Aran, Oppenheimer, Wachsmuth, and Dr. Meryon. . . . Of the nature of the blight that withers the muscles, I am only able to say, with Dr. Meryon, that it is a fatty and granular degeneration of the muscular fibre, similar (often at least) in its anatomical bearings to what is observed in fatty heart, or in muscles which have degenerated from section of their nerves. There would seem to be an error of nutrition in the muscular fibre, not dependent, as Dr. Meryon thought, on a general depression of the nutritive functions—these being almost always in their highest perfection—but brought about under the influence of a peculiar constitutional predisposition or diathesis, by the aid of one or more of the special exciting causes mentioned in chapter V.

"That the entirety of the disease is not comprehended in its local manifestations, and that a constitutional predisposition lies behind these, is made evident by the transmissibility of the disease from parent to offspring; and also by the total inadequacy of the exciting causes, acting alone, to produce the series of events which characterize wasting palsy. An additional proof is seen in the bila-

teral symmetry of its march. This symmetry, although by no means constant, or always exact, is quite as remarkable as anything presented by pulmonary tubercle, articular rheumatism, or syphilitic or other eruptions of the skin."

It would be impossible in the limited space at our command to do justice to the able arguments by which these conclusions, in which we fully concur, are supported; for them we must refer our readers to the book itself. The facts we have already noticed seem to us to be sufficient to establish their truth.

The diagnosis and prognosis of the disease are next fully treated of in chapters VIII. and IX. As to the prognosis, Dr. Roberts is more hopeful than most preceding authors. In the diagnosis we have to bear in mind the atrophy from section of, or pressure on, a nerve, and from any cause necessitating a state of continued rest. But the real difficulties of the differential diagnosis lie, it is said, in the separation of lead paralysis from that palsy which sometimes follows the so-called vegetable colic (endemic colic of hot countries). Lead palsy has strong resemblances to Cruveilhier's atrophy. The limited groups of muscles affected, the wasting, and the similarity in the parts attacked, may be specified, but then there is the suddenness of the invasion, as well as the history and lead cachexia, to distinguish the two diseases. Besides, lead palsy affects the extensors chiefly, the flexors escaping altogether, and the wasting is very distinctly *posterior* to the failure of strength; and, according to Duchenne, a muscle palsied by lead loses entirely, in a great part, its electric contractility; whereas in wasting palsy it responds to the electric stimulus in a degree proportional to its bulk.

The treatment is considered in the tenth and last chapter. Those who regard the disease as having its origin in the spinal cord or nerves apply their remedies over the vertebral column. Dr. Roberts says there is no evidence that benefit has been derived from this plan, and often its futility has been most apparent. When improvement has taken place, other remedies have been employed at the same time. Remedies intended to act on the system at large are beneficial when any decided taint has been observed, as syphilis or scrofula, which is very rarely. The remedies that he believes most worthy to be relied on are, methodical exercise, and cold, mineral, and douche baths, which, however, must not be used indiscriminately; thermal and sulphur baths; frictions, with stimulating liniments; galvanism in Duchenne's form—Faradization[a], for the proper con-

[a] See the present series of this Journal, vol. xii. p. 301.

duction of which directions are given. Above all, the exciting causes of the disease, especially over-work, must be avoided, and the treatment must be commenced early to have any prospect of success.

We cannot close our notice of this admirable monograph without again recommending it to our readers as a complete and masterly exposition of the history, pathology, and treatment of a puzzling and not very infrequent class of cases, concerning which it has hitherto been most difficult to obtain any correct information.

Sympathetic Nerve. By J. Drummond, M. D., Edinburgh. Article in the Cyclopædia of Anatomy and Physiology, Part xlvii. August, 1855.

On some of the more Obscure Forms of Nervous Affections, their Pathology and Treatment; with an introduction on the Physiology of Digestion and Assimilation, and the Generation and Distribution of Nerve Force, based upon Original Microscopical Observations. By Harry William Lobb, L. S. A., M. R. C. S. E. London: Churchill. 1858. 8vo, pp. 312.

The Ganglionic Nervous System, its Structure, Functions, and Diseases. By James Geo. Davey, M. D., M. R. C. S. E. London: Churchill. 1858. 8vo, pp. 309.

(*Continued from* vol. xxv. p. 441.)

II. We have placed Mr. Lobb's book second on our list, because we wish to bring a theory that he discusses under notice in connexion with the conclusion of Dr. Drummond's article, as it chiefly relates to the nature and mode of the influence exerted by the nervous system over the vegetative functions. Rather than break the train of thought, we shall proceed at once to notice the theory, and allow the consideration of the general character of the work to stand over for the present.

The theory of the correlation of physical forces, proposed by Mr. Grove a few years ago, opened a new field for investigation, and has been the means of establishing relations, and leading to inductions of great importance. In the additional notes appended by Sir Benjamin Brodie to the account of his physiological researches republished in 1851, he, with his unvarying zeal for the advancement of physiological science, has suggested the application of the results obtained by Mr. Grove and Dr. Carpenter to the formation of a theory of nerve force.

Mr. Lobb has taken the suggestion, though without any kind of acknowledgment, and on it raised the superstructure that we have now to bring under the notice of our readers.

The passage we refer to in Sir Benjamin Brodie's work will be the best introduction we can give to Mr. Lobb:—

"It has been shown by Mr. Grove," says Sir Benjamin, "that there is great reason to believe that the physical forces to which we refer the ever varying phenomena of inorganic nature, such as light, heat, motion, magnetism, and chemical affinity, are in a state of mutual relation; so that under certain circumstances one of these forces is capable of producing or being converted into another. And Mr. Grove has further suggested that the principles and mode of reasoning on which his observations are founded may be applied to the organic as well as the inorganic world; and that muscular force, animal and vegetable heat, &c., may, and sometimes will, be shown to have similar definite correlations. Supposing these views to be correct, may it not be that the union of carbon with oxygen gas, which, under ordinary circumstances, is immediately followed by the evolution of heat, is in the living body productive of a different result (such as the maintenance of the nervous power, or the irritability of the muscles), and that it may be thus only indirectly concerned in the calorific function?"

Pursuing the idea here suggested, Mr. Lobb sketches, after Simon, the various chemical and molecular changes that are constantly going forward in the capillary circulation: these, he argues, necessitate the evolution or setting free of certain large currents of force, "cell electricity, or cell force, which correlate into animal heat, or nerve force, or are retained as an expansive force (a force which lies dormant between the particles of matter separating them from one another)." This "nerve force, or intelligence," into which the cell electricity, or cell force, has been changed, is taken up by the sympathetic nerves which everywhere accompany the arteries, and by them conveyed to the nearest ganglia,

"Where it is intensified and reflected in another direction; thus, if the tissue from whence the intelligence arrives requires more blood, the fluid is passed on to the branch of the artery supplying the part, and more blood is poured into it; if, on the contrary, the part is well nourished, less blood is sent there, but it is directed in a different direction; therefore, in a healthy condition of the part, that ganglion undertakes its whole supervision, and the fluid or intelligence is not passed on to any ganglion beyond, but is reflected to the portion of tissue under its immediate direction. The fluid

acts instantaneously; therefore, fluid collected at one portion of a capillary, may be referred to and from a centre to the next capillary, before the circulation has advanced so far, so that any repair required by the tissue, or any effete matter to be removed, is already understood by the blood-cells, which immediately proceed to effect the desired change."

The foundation of Mr. Lobb's pathology will be found in the following:—

"If the peripheral fluid be normal" (that is, the cell electricity or cell force), "the nervous fluid will be the same; but if not, then the ganglia have a resisting power, until they themselves, by malnutrition, yield and transmit abnormal fluid; if, therefore, a slight local disease occurs, it may not be transmitted, but may be cured locally; but if the general system is weak, the abnormal fluid transmitted to the centre is referred, and so complications innumerable arise."

The fluid is, he says, transmitted to the ganglia in intermittent currents; hence all tissues or organs controlled by the sympathetic have a rhythmic action. Rhythm he also, however, ascribes to the slow conducting powers of the sympathetic, this slowness arising from the "*numerous insulators—the ganglia.*" The peculiarity of the sensory powers, of which we have already spoken, are also ascribed to these insulators, the ganglia. The phenomena already described as having been observed by Bernard, on dividing the sympathetic, Mr. Lobb considers to be the result of the part having

"Its vitality *nearly* under its own control, it [the part] is not effected by what is going on elsewhere; it does not *know* that the stomach, the spleen, the liver, may want a larger supply of blood, therefore it takes all it can get for its own nutrition; more blood is attracted to the part, tissue change goes on rapidly, even stasis may take place, and suppuration be the result, the blood not knowing that it is required elsewhere, from the communication with the centres being cut off."

In the preface Mr. Lobb tells us that he is perfectly aware of the incompleteness of his views on the generation and distribution of nerve force, but that he offers them as the first fruits of his labours, hoping eventually, and by degrees, to collect a sufficient number of facts to enable him to perfect a theory on this abstruse subject; and he sums up, at the conclusion of this section by claiming that *he has led the way* to a new field of research.

"The generation by molecular change, the transmission to the

ganglion, the intensifying and reflection to the periphery and to other centres, of nerve force or fluid, or electricity, for the uses of the system, I have, to the best of my ability, endeavoured to explain; and though many errors may be discovered by my readers —I trust indulgent critics—still I venture to hope that I have led the way to a field of research hitherto lying fallow in the vast realms of physiology."

The sketch we have given of Mr. Lobb's views will sufficiently indicate the manner in which he has *followed the lead* of Sir Benjamin Brodie into the field of research laid open by the labours of Mr. Grove and Dr. Carpenter. Most of our readers will, we expect, agree with us, that, notwithstanding the assistance of his unacknowledged leader, he has not done much; and that a theory which requires to be expressed in such figurative language is not calculated to make much way in the vast realms of physiology. And yet, that the various chemical and molecular changes occurring in the capillaries may set free force which may be correlated into nerve force, as suggested by Sir B. Brodie, or in some other way stimulate the extremities of the nerves, and thus originate impulses which may be carried to the ganglia, and be thence reflected to the muscular coats of the arteries so as to regulate the quantity of blood sent to the tissues, is quite in accordance with all that we know in physiology. We would suggest to Mr. Lobb that if he applied the talents he seems to possess to the working out of this suggestion, instead of prostituting them to the production of such a work as the present, he might indeed "confer a boon on the great body of the profession,"—a real boon, instead of such a spurious affair as this.

Prostituting his talents, we have said, for the work is one of those pseudo-scientific books calculated for the public eye, written in accordance with popular language, and intended to enlighten the people as to the great skill peculiarly possessed by the author. The book commences at the very beginning of that interesting subject, the physiology of nutrition, with a disquisition on aliments; then we have a theory of the vibration of the ultimate atoms of matter, which is supplied by his friend Mr. Pollock, and which is, perhaps, very learned,—the best thing we can say for it is that it is short,—for even to our critical mind it is utterly incomprehensible. Then, having described the elementary proximate principles of food, our author traces them, step by step, through digestion, chylification, and absorption into the blood, and to the building up of the tissues; and again out of the system by the excretions. All is done in the popular style, and in every section errors, more or less im-

portant, are met with, and the details are so defective as to render the work one of no value to the well-informed practitioner.

We feel bound to give the following extract, for reasons that will appear on the face of it, and especially that the estimate Mr. Lobb has of his own abilities may be seen; the italics are ours.

"The chyle," he says, "is of the greatest importance, for on its normal elaboration depends the new blood which is to nourish and form the body. I shall boldly give my views concerning the formation of the chyle, for upon them is principally based the further reasoning on the physiology and pathology of the affections of which I treat; *and if what I bring forward is novel*, let the evidence of its truth be examined into before it is set aside. In these days of progress, a discovery or invention, however *contrary to received views it may be*, is still looked upon with respect until it is proved to be unworthy of acceptance. *We are not living in the days of Harvey, of Jenner, or of Hewson, those shining lights who dazzled our fellow mortals, from their great superiority to their contemporaries; but in days when hundreds of good men can examine into and are capable of forming a correct judgment of any discovery, be it mechanical, chemical, microscopical, or purely theoretical.* I trust, therefore, that I may not be judged by preconceived notions, but by the *correctness or incorrectness of the various steps of my reasoning, and the data on which they are based.* In a work of this description I am unable to give my *observations and experiments in their minutiæ*, although I trust some day to be allowed that opportunity, but merely their results."

The wonderful discovery made by this shining light, the equal of Harvey, &c., is that the chyle corpuscles are formed by the crystallization of phosphate of lime!

"Our microscopes are unable to show the earliest crystallization of the phosphate of lime, but with a powerful sixteenth by Powell I have seen them vibrating when they are too minute for measurement. Upon entering the lacteal, the phosphate of lime commences vibration; but being in a fluid that is denser than water —in fact, a solution of proteine and oil—each crystal becomes coated with a portion of these ingredients, vibration continuing; when many of these molecules are formed, they, upon approaching one another, become attached in a line, like a small string of beads, vibration still continuing; when a certain number are thus joined, they double one upon another, forming a nucleus, to which minute atoms are continually added, until a tolerable aggregation is the result; this is a mass of molecules."

The external atoms, still undergoing this mysterious vibration, next proceed to form the cell wall; but our readers have probably formed their own conclusions as to the whole affair.

The second part of the book opens with an imperfect account of the chemistry of the urine; then we have a still more imperfect account of various affections, accompanied by abnormal conditions of the urine. Thus a little more than half of the book is occupied: the greater part of the remainder is devoted to the consideration of the nervous affections accompanying spermatic discharges, with descriptions of the delights of love, and of the legitimate gratification of sexual instinct, and the terrible effects, *such as insanity, suicide, epilepsy, hysteria, chorea, and stammering, sure to follow on the abuse of the generative organs.* Mixed up with all this we have sneers at hospitals, at medical education, and at surgeons and physicians.

"To disarm criticism," he says, "I must here record that *I know*" (the italics are Mr. Lobb's) "many physicians and other members of the profession who do not acknowledge ulceration of the ejaculatory ducts, and degeneration of the prostate, amongst the affections to which man is heir; or, if they do, have not the slightest idea of how to treat them."

We need not say, after the foregoing, that we have cases detailed of successful cures effected where physicians and surgeons had failed; and also cautions given as to the necessity of having the treatment carried on under the immediate care of one who understands the subject. In truth we should not have deemed the work worthy of so extended a notice but for the too favourable reception it has met with from some of our weekly contemporaries.

III. Dr. Davey has himself suggested to us the word whereby we may best characterize his book, the third on our list. It is a most "inextricable" book, and as he has "found it impossible to follow Marshall Hall, so inextricable do his statements not unfrequently become," he will, it is hoped, sympathize with those who have frequently found it impossible to follow his own for the same reason. This "inextricability" arises from many causes,—the style is very obscure, it is diffuse, and there are frequently "inextricable" parentheses, and parentheses within parentheses; the matter is ill arranged, and there are many repetitions; but more "inextricable" still is the state of amazement into which we fall as we read, unless indeed we are prepared to ignore all that we have ever learned on the subject, or have lost the faculty of amazement. There are, we regret to say, other faults besides "inextricability;" but of these we shall speak further on.

The volume consists, first, of an introduction of thirty-six pages; then there is a chapter on the structure of the ganglionic system, of thirty pages; then we have 123 pages, forming chapter II. and its appendix, on the functions of the system; chapter III. and its appendix occupy some ninety pages more, with the consideration of the pathology of the system; and chapter IV., of twenty-seven pages, on the general treatment of disease, finishes the book.

In the introduction Dr. Davy states his belief that it is a matter of "logical demonstration," that vegetables possess a ganglionic nervous system. This demonstration is not very conclusive:—

"If the organic functions, as they obtain in the animal, are to be referred to the ganglionic nervous system; or, what is the same thing, to the irritability of which it is the immediate seat, it follows, admitting the existence or operation of the same organic functions in the vegetable kingdom, that plants are necessarily endowed with nerve structure, and that this constitutes the analogue of the ganglionic nervous system in man and the higher animals."

In the first chapter Dr. Davey announces that his object being to demonstrate the several functions of the ganglionic nervous system, his book is physiological rather than anatomical. However, he thought it necessary for the entirety of his subject, and the more easy comprehension of his views, to prefix some general remarks on the anatomy of the sympathetic nerve. He accordingly gives a rapid sketch of its descriptive anatomy, tracing it from its centre, the solar plexus, that he might not treat it with less respect than anatomists do the cerebro-spinal system. Then he considers its minute structure, adopting the descriptions of Bichat and Fletcher, which is rather strange, seeing that he had before intimated his unwillingness to believe "in these days of the microscope and electricity, in the nonsense which pleased our grandfathers;"—in a note, it is true, he shows that he is acquainted with some of the more recent observations on these matters, but they are evidently not to his mind.

The remainder of the chapter contains some really very amazing statements, such, for example, as, that every point of every nerve of the ganglionic system is to be regarded as a centre of nervous energy to itself. Or, again, that—

"So universally and so copiously is the ganglionic nervous tissue distributed, that, like the parenchymatous tissue, it is interwoven with every portion of the organism; and, more even than this, constitutes a great part of the volume and weight of the body."

The former statement is adopted from Fletcher, who did not observe the distinction between gray fibres and gray vesicular matter; but this one is supported, a little further on in the book, by another "logical demonstration." It appears Dr. Anderson describes the earliest traces of nervous tissue as being in the form of minute *globules*; and Dr. Carpenter describes the tissues as having their origin in a process of *cell* growth, —the cells of Carpenter are, then, globules—the nerve globules of Anderson, and hence the universal distribution of the ganglionic nervous system is apparent! Between this statement and its remarkable "confirmation" by Carpenter, we have it argued that the sympathetic system is the first that is met with in the lower animals, and, by a peculiar process of addition and subtraction, a passage from Solly is adduced as showing the tendency of all anatomists to take this view. It appears, moreover, that man and a monad have a common starting point,—a globule,—and this is either a nerve globule, or has nerve globules scattered through it: hence the ganglionic system is the first part formed in utero. The whole evidence is so complete, that Dr. Davey is obliged with regret to perceive that Dr. Carpenter is so inclined to discredit the existence of a nervous system in the lower classes of animals, fearing, as it would appear to Dr. Davey, "that its demonstration would endanger his *cell theory*." Hoping that Carpenter will overcome his prejudices and fears, we will leave Dr. Davey's anatomy for his physiology.

We have already seen that the ganglionic system of nerves is said by Dr. Davey to form, not only the great portion of the weight and volume of the body, but is the life of it, holding the same relation to the otherwise dull and inert frame as the fire to the statue of Prometheus. Consequently, it cannot excite surprise to be told, that the brain and spinal cord are subsidiary organs, and dependent not only for their existence and integrity, but for the performance of their functions, on the ganglionic system; and that the "irritability" observed by Le Gallois in an animal deprived of its brain and spinal cord, and that observed by Marshall Hall in one deprived of its brain, and, as he believed, but erroneously, according to Dr. Davey, the entire of the ganglionic system "was [*sic*] precisely of the same kind, though plainly much modified by the circumstances of vivisection in either case."

In explanation, apparently, of all this, we have Mr. Solly again adduced:—

"It must never be forgotten that each ganglion belonging to the organic nervous system is held to be independent of every other;

and, what is more, each nerve proceeding from a single ganglion is, in a great measure (writes Mr. Solly, on the authority of no less an individual than Cuvier himself) independent of that ganglion, and even that each point of such nerve is independent of all the rest, and constitutes *per se* a distinct focus of nervous influence."

Now it will be remembered that one of the distinguishing features in Mr. Solly's writings is the boldness with which he announced, before the doctrine was generally received, that the nervous fibres were exclusively devoted to the conduction of impulses to and from the corpuscular substance, and it must therefore excite surprise to find him brought forward as a witness to prove the contrary. At first we thought it was a mistake in the printing, and that some other author was meant; but reading on we met with still more startling examples of the dishonesty, we must call it, with which Dr. Davey makes quotations, and therefore we made a search in Solly's book, and found that the words do, it is true, occur; but it is in an account of the literary history of the sympathetic nerve, quoted by Mr. Solly from Dr. Fletcher's Lectures, in which they are given as expressing the views of Bichat, and not of Cuvier. It would, however, be quite as true to represent Solly as writing, on the authority of Galen, or Willis, or Lancisi, that the ganglia were to be regarded as "buttresses," or "diverticula," or "forcing pumps for the animal spirits," expressions occurring in the same passage, as to assert that he teaches, even on the authority of Bichat, that each part of the nerve constitutes, *per se*, a distinct focus of nervous influence," In further proof of this pre-eminence of the ganglionic nerves, reference is made to cases recorded where the fœtus has arrived at full development without having either brain or spinal cord, *because*, Dr. Davey says, they have ganglionic nerves. And the dependence of the cerebro-spinal centres on the ganglionic system for the power of performing their functions is said to be shown by certain experiments,—removing or injuring the ganglia; but as these are not detailed, and as the results stated do not agree with those obtained by Reid, Bernard, or Brown-Sequard, to which allusion has already been made, we cannot give in our adhesion to the conclusions of Dr. Davey, any more than we can accept the inferences he draws from the experiments of Sir B. Brodie, inferences of which "it does not anywhere appear that even Sir B. Brodie, or any one of the many commentators on his experiments, had any idea."

The development of the body, its nutrition and growth, the processes of respiration and circulation, secretion and ab-

sorption, having been proved, in the foregoing fashion, to depend on the ganglionic system, Dr. Davey next shows that these functions are not interrupted during sleep, because the ganglionic system never sleeps. Their continuance during sleep manifests, he says, their independence (respiration included) of the *cerebro-spinal* system, the action of the *spinal* as well as the cerebral system being, it is said, suspended in sleep. In evidence of this we have a long quotation from Dr. Von Feuchtensleben, proving the suspension of the *cerebral* functions, and ending, *according* to Dr. Davey, in the following conclusive manner:—"Sleep, in short, is an affection of the cerebro-spinal system: the ganglionic nervous system never sleeps." However, on turning to Feuchtensleben's book, we found all Dr. Davey's quotation, *except* this conclusive proof of his argument, which does not exist in the whole work. On the contrary, in the foot-note, Baron Feuchtensleben adopts Marshall Hall's statement, that "sleep is a cerebral affection; the *spinal and* ganglionic systems never sleep."

Animal heat is also said to be a function of the ganglionic nerves; because it does not depend on certain other stated causes it must, Dr. Davy argues, depend on these; and he says, if "the normal function of this (or these) same important centre (or centres) be interfered with, or interrupted in any way, the animal heat will directly fail," a conclusion not *just* confirmed by the experiments of Bernard, already mentioned.

Instinct, too, is said to be a function of this system; and among other proofs of this the case of the infant born without brain or spinal cord is referred to, where, he says, "it is a fact well insisted on, that instinctive movements exist, and are well and beautifully demonstrated." This is, however, an instance of shortness of memory, a thing that ought always to be avoided, for in a previous page the truth is admitted, that such infants die immediately on birth. It is not, we regret, an accidental slip of the memory, for the matter is returned to again, and we are told:—

"It should be remembered that not only are the first movements of the infant, i. e., in its normal state of being, of a purely automatic character, and analogous to the instinctive actions of the lowest animals, but that those also of the monster born without either brain or spinal cord, and with only ganglionic nerve matter, are of precisely the same kind."

It appears, too, that the writings of Dr. Carpenter confirm Dr. Davey's opinion as to instinct, though he himself, as it seems to us, thinks that they inculcate a very different view.

We must leave it to those who like the anatomy and physiology which we have, to the best of our power, sketched from this "inextricable" book, to disentangle the remaining chapters for themselves. We may remark, however, that Dr. Davey is an advocate of mesmerism and phrenology, sciences for the teaching of which his style of writing seems to be peculiarly adapted.

Observations on Venereal Diseases: derived from Civil and Military Practice. By Hamilton Labatt, A.B.T.C.D., F.R.C.S.I., &c. &c. Dublin: Fannin and Co. 1858. 12mo, pp. 283.

Years have passed since the name of Labatt, so familiar to our readers, came before the profession in connexion with the history and phenomena of an animal virus, and its effects upon those systems which by absorption had been made subject to its influence. The present author appears to give us the results of his experience, also relative to the effects of the absorption of a virus upon the human body, but one whose baneful and destructive consequences, contrast most strongly with the benign and redeeming influence of that which formed the theme of his father, the late eminent Samuel Bell Labatt.

It seems that during the late war with Russia, the garrison of Dublin, the head-quarters of the central military district of Ireland, was, to a certain extent, reduced to the necessity which affects a detachment barrack in the wilds of Connaught, so far as regarded the necessity of employing a civil medical practitioner to take medical charge of some of the troops.

The author had the good fortune to obtain this charge, whether at the munificent (?) stipend allowed by the Government, or at a remuneration more in accordance with his position and standing, it does not transpire. However, having been relieved from the temporary charge of a depôt hospital, he was sent to do duty at the General Hospital, Phœnix Park, in which latter position he remained, so far as we can judge, at least a year.

The staple disease of a military hospital in a garrison town is venereal, both in the form of gonorrhœa and syphilis. During Dr. Labatt's short military experience, so many as 470 cases came under his notice, of which he has preserved statistical memoranda. Upon this as a foundation, in addition to his previous experience in civil practice, he builds his present volume. Now, although we cannot but admit that 470 cases

constitute a number too small, from which to arrive at any permanent conclusions, relative either to the peculiarities of the disease, or the most suitable treatment for each of its various phases, yet the opinions of the individual who has carefully attended to the histories and treatment of comparatively a few cases, are worthy of respect.

The administration of the affairs of the Army Medical Department, during the late war, received a just share of abuse, along with that of other departments of the public service, because of inefficiency. To that inefficiency, however, we are indebted for the volume before us. Some may entertain the opinion that it would have been better had this book not appeared, since, by calling to mind "bygones," it might have the effect, at this late period, of drawing the veil which should have ever remained closed, upon the past shortcomings of that lamentably parsimonious establishment which once had its unhealthy existence near St. James'. But though our gorge may be raised when these past imperfections are brought back to our memory, still we must feel pleasure at the contemplation, that amongst our Irish medical literature there now exists a manual on the venereal disease, which is justly entitled to be regarded as one admirably adapted for the student's use, containing, as it does, a careful epitome of all that is most important on that subject.

Dr. Labatt has proved himself fully conversant with the literature of the venereal; he has judiciously arranged the various opinions of the most eminent civil and military authorities, and upon each particular head he has modestly and sensibly given his own.

The volume comprises separate chapters upon each of the following subjects:—Primary and constitutional syphilis; syphilis in infants; gonorrhœa; and gonorrhœal ophthalmia. The descriptions of the various forms of ulcers are concise and clear; and, on the whole, his style may be well described by the term "readable."

With regard to Dr. Labatt's treatment of syphilis, it may be said that he is a mild mercurialist. The following quotations display his views on this matter in a general way. The author remarks:—

"Although it must be admitted we are yet far from fixed principles, nevertheless, there are facts which may be studied with the utmost advantage, as pointing out to us the necessity for rejecting uniformity of treatment in primary syphilis. It is granted by both sides that, after the mercurial as well as the non-mercurial plan, secondary symptoms have supervened. When a case of se-

condary syphilis is brought under the notice of the surgeon, he generally, for his own future guidance, ascertains, as far as possible, whether mercury has been used for the primary disorder or not. Let him look back on experience accumulated in this manner, and he will at once recollect to have witnessed most complicated cases of secondary symptoms, that have ensued on primary affections, treated some by mercury, and others by an opposite plan. I am free to grant that, on a careful analysis, we shall find the result in favour of mercury judiciously exhibited. Yet it is certain that, generally speaking, the secondary symptoms following the non-mercurial plan are of a more mitigated type than those resulting in cases where mercury has been used in the primary stages. Neither do we meet with affections of the third order of parts in the former so frequently as in the latter—facts to be explained either by the mode in which that agent has been administered, or by the particular cases to which it has been applied."

And again he observes:—

"Although it cannot be denied that certain forms of primary syphilis are curable without the aid of mercury, I am by no means prepared to accept with unqualified assent all that has been advanced in support of this view," &c.

With this short notice we conclude, by recommending this volume to the attention of all students of the disease, who cannot but benefit by its perusal. Before drawing to a close, however, we would beg to make one or two remarks on a subject which we consider one of importance, and we are sure that, had the author viewed it in a similar light with us, he would have spared us the pain of finding fault. Dr. Labatt has presented us, at page 11, with a short abstract of a few cases of secondary syphilis (a form well known to be more rare in army than in civil practice, and for obvious reasons); and in this list, we find the names of certain soldiers of certain gallant corps *printed in full.* We would have preferred *initials only;* and the numbers of the regiments were quite unnecessary for the author's purpose. To be sure, it may be said in extenuation, that since the names have been written in full upon the pages of the hospital register, there could be no harm in printing them in a book. But it must be remembered that an hospital register, and sick returns, are private to a certain extent, closed as they are from the *general* gaze. Let our readers conceive what would be the feelings of colour-sergeant ———, should he see himself *before the public in undress;* as having, upon a stated day of a stated month, in a stated year, been discharged from hospital, after "extensive scaly eruption occupying trunk and extremities; spots arranged in blotches

with scaly white appearance;" and as having, "three months" prior to his admission, "had a sore on his prepuce which healed under the use of mercury." Surely, it is by no means extravagant to suppose that the colour-sergeant may get a peep at "Labatt" from the hospital sergeant; or the latter having by chance found the volume in the surgery, and seen the literary distinction granted to his friend, may either in friendship acquaint him, or twit him upon it at the sergeants' mess. Aye, and not improbable, now-a-days, having been raised from the ranks, the quondam non-commissioned officer may be reminded of his former peccadilloes by a casual perusal of our author—for officers are curious on these matters—whilst tossing over the scanty library of his friend, the regimental surgeon. Seven privates are rendered similarly immortal, one of whom, however, having, as we are informed, been discharged the service on account of the supervention of phthisis, is, doubtless, ere this, past either seeing or hearing.

We regret having to draw attention to this subject, but the omission of the names would, we feel sure our readers will agree with us, have been a desideratum.

A Manual of Psychological Medicine: containing the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of Insanity. With an Appendix of Cases. By JOHN CHARLES BUCKNILL, M. D., London, Licentiate of the Royal College of Physicians; Fellow of University College, London; Fellow of the Medico-Chirurgical Society; Medical Superintendent of the Devon County Lunatic Asylum; and Editor of the Asylum Journal of Mental Science. And by DANIEL H. TUKE, M. D., Licentiate of the Royal College of Physicians, London; Lecturer on Psychological Medicine in the York School of Medicine; and Visiting Medical Officer to the York Retreat. London: Churchill. 1858. 8vo, pp. 562.

IT has been repeated again and again by some persons, that books generally are multiplying of late years in a most unprecedented manner on the world; and there are those who declare that in the "deluge" of them, the greater number of readers must be content with little more than glancing over the title-pages. It is thought by not a few that this idea may be applied in a moderate degree even to medical books. Still, there are men who manage to "read;" and, as we have just remarked, not a small number who manage to write, which is

certainly a more laborious matter, where various authors have to be referred to, consulted, compared together, and extracted from.

We have now before us a work on Insanity, termed "A Manual," and we must own not unwieldy; but which we may, nevertheless, call elaborate, as being very tolerably full in every department: and those departments are numerous, as may be supposed from the title at large (given at the heading of this article), but will be clearly perceived as we proceed in our review. The warranty of the authors for undertaking such a work is, in some measure, expressed by what is appended to their respective names on the titlepage.

We confess we are gratified to find psychological medicine at length attaining that general attention which was so little accorded to it through a very considerable period. We may say, that until within the present century, the investigations connected with this branch of medicine were comparatively feeble; and several of the deductions made we conceive to have been calculated to challenge doubt, if not to call for absolute rejection. But within the time alluded to, a very animated impetus was given to the consideration of the whole subject, in its various ramifications; and experienced men and learned authors are now yearly (we had almost said *daily*) coming forward with histories, facts, and theories, well deserving of attention, and examination, though not altogether deserving, we presume, of unqualified acceptance. Many of the works we are now alluding to are both valuable and interesting, aiding, in one way or another, the cause of science, and the amelioration of our common humanity. We could name several works, and their authors, whose merits we gladly own; and to certain of these authors has been conceded the praise which was fairly their due. Dr. Prichard's "Treatise on Insanity," amongst others, will probably never cease to be a volume in almost every reading physician's library; but we have no hesitation in saying that the work we are at present reviewing appears to us much more suitable than Dr. Prichard's for medical students, for medical men generally, and finally, for scientific and philosophical men not of the medical profession.

The authors very properly and very correctly state that—

"A knowledge of the nature and treatment of insanity is now expected of every well-educated medical man. The India Board require it of all persons to whom medical appointments are given under their new system of competitive examination. It is reasonable, therefore, to expect that the good example thus set will be followed in other quarters; and a desire to attain a competent know-

ledge of this important branch of medical practice has become far more general in the profession than it ever before has been."

Before we proceed further, it may be well to apprize our readers that the chapters on the history, nosology, description, and statistics—namely, that portion of the work from the commencement to page 268—are written by Dr. Tuke; and that the chapters on the diagnosis, pathology, and treatment of insanity, and the Appendix of Cases, &c. (i. e. from page 268 to the end of the work), are written by Dr. Bucknill. A good general idea of the work may be given by simply noting *seriatim* the headings of the chapters. These chapters are ten in number, viz.—Chap. I. Historical sketch of insanity among the nations of antiquity, mainly in regard to its extent.—Chap. II. Opinions of ancient medical writers on the treatment of the insane.—Chap. III. Modern civilization in its bearing upon insanity.—Chap. IV. Amelioration of the condition of the insane in modern times, especially in regard to mechanical restraints.—Chap. V. Of the definition of insanity, and of classification.—Chap. VI. Of the various forms of mental disease.—Chap. VII. The statistics of insanity.—Chap. VIII. Diagnosis of insanity.—Chap. IX. Pathology of insanity.—Chap X. Treatment of insanity.

The Appendix to the volume contains :—First. A selection of cases, which are illustrated by the portraits in the frontispiece. These cases are seven in number : acute mania, monomania of pride, congenital imbecility, general paralysis, acute suicidal melancholia, primary dementia, secondary dementia.—Second. Some cases illustrated by treatment.—Third. Some cases illustrating causation and pathology. The index to the volume, being pretty full, greatly facilitates reference to any particular point.

The details of the way in which the insane were formerly used in asylums *generally* would be most harrowing to the feelings, as the management and usage were, in truth, a monstrous outrage on humanity, on science, and on common sense. We rejoice in the remarkable changes which have taken place. "Among the bad asylums (observes Dr. Conolly) the York Lunatic Asylum was the worst." This institution was founded by general subscription in 1777, and had for its object the decent maintenance and relief of such insane persons as were in low circumstances. Up to the year 1791 no suspicion in regard to the comfort of the patients was felt. In this year, however, some members of the Society of Friends sent one of their family (a lady) for care to the Asylum. The rules of the

Asylum forbade her friends to see her: she died; something wrong was suspected; and from that day the Society of Friends determined to establish an institution in which there should be no secrecy. William Tuke was the great founder of the new asylum; and from the first, he and his friends pursued, in their institution, those principles which are now universally acknowledged. By a singular and interesting coincidence (writes Dr. Thurnam), it was in the spring of 1792,—the very year in which the celebrated Pinel commenced the amelioration of the treatment of the insane in France, by the truly courageous act of unchaining fifty supposed incurable and dangerous lunatics at the Bicêtre,—that the establishment of the "Retreat" at York was proposed by the late William Tuke:—

"Each (as is observed in the American Journal of Insanity)—*each* perceived the wretchedness, the misery, the suffering of the insane around him; each was moved to compassion; each resolved to effect a reform in the treatment; each succeeded. This recognition of services to humanity is due to each. To *each*, therefore, (to Pinel and to William Tuke, respectively) we freely accord it."

But, what is insanity?—or, what brief definition will modern psychologists offer intelligent inquirers? for it must be observed, that the definition of Locke, or of Cullen, as of many others, has failed to be fully satisfactory. The former says:—"Madmen do not appear to have lost the faculty of reasoning, but having joined together some ideas very strongly, they mistake them for truths, and err as men do who argue from wrong principles." Cullen defines madness to be—"a lesion of the intellectual faculties, without pyrexia, and without coma."

Passing by the definitions of Spurzheim, Guislain, Morel, Lélut, and others, we may note the definitions of one or two modern authors better known to many. Dr. Combe remarks:—"A prolonged departure, and without an adequate external cause, from the state of feeling and modes of thinking, usual to the individual who is in health, is the true feature of disorder of the mind." But he finds it necessary to add that insanity is—"a morbid action in one, in several, or in the whole of the cerebral organs; and, as its necessary consequence, functional derangement in one, in several, or in the whole of the mental faculties which these organs subserve." Dr. Conolly is as well aware as any man of the difficulties which attach to any attempt at a complete definition, but submits one which embraces much, but by no means all, that might be deemed necessary:—"An impairment of one or more of the faculties of

the mind, accompanied with, or inducing, a defect in the comparing faculty." Dr. Bucknill regards insanity as—

"A condition of the mind, in which a false action of conception or judgment, a defective power of the will, or an uncontrollable violence of the emotions and instincts, have separately or conjointly been produced by disease."

The illustrious dramatist, whose knowledge and observation so continually astonish us, has numerous allusions to madness in his writings, and he seems to be well aware of the difficulty of a proper definition. In Act II., Scene ii., of the tragedy of Hamlet, Polonius is made to say—

"Your noble son is mad:
Mad, call I it; for to define true madness,
What is't but to be nothing else but mad?"

Attempts at defining insanity will, however, still be made by medical men, and by philosophic minds; but, as the authors of the "Manual" well remark—

"It is not in any definition of mental derangement that the student will learn what insanity really is."

He must both read descriptions of the disorder in suitable books, and obtain actual observation of the insane. Two observations of the authors we deem it by no means unimportant to note, in connexion with recognising the disease, which generally is palpable enough, whatever difficulty may occasionally, or very rarely, occur as to a positive decision. They prove the matter very plainly by analogy:—

"Thus, while definitions of anger would differ with every definer, all would agree that anger is anger, when exhibited before them."

Again, they say:—

"Cases of insanity certainly exist, in which doubt as to their real nature will be experienced by the student; but the existence of these, such as graduate between reason and mental disease, is, as Sir Henry Holland observes, but a part of that law of continuity which pervades so generally every part of creation."

We have given the heads of the chapters; and from each of these chapters we could give many striking and important extracts; but this we must forego at present. An idea of how much each chapter embraces may be formed from a specimen of the

contents of a single chapter, the chapter termed—"Definition of Insanity, and of Classification." Contents, viz.:—

"1. *Definition of Insanity.*—Difficulties of attempting it; Illustrations; Locke's Definition; Cullen; Dr. Combe; Spurzheim; Lélut; Dr. Conolly; Dr. Guislain; M. Morel; Essentials of a Definition of Insanity; Concluding remarks on the subject.

"2. *On Classification.*—Various Classifications from the earliest period of the cultivation of Medicine; Hippocrates; Celsus; Cicero's Strictures; Roman Law; Aretæus; Cælius Aurelianus; Galen.

"Modern Nosology.—Sauvages; Vogel; Linnæus; Cullen; Arnold; Mason Good; Pinel; Esquirol; Guislain; Conolly; Parchappe; Baillarger; Prichard; Bucknill; Noble; Munro.

"Remarks on Classification.—Arrangement adopted in this work."

We may have given a very imperfect idea of the book; but we cannot at present review it more fully. We are quite free to boldly state, however, that we know of no one book which so fully embraces everything connected with the insane; and we deem the "Historical Sketch of Insanity among the nations of antiquity," and we may say, down to the present time, as instructive as it is interesting, and more fully handled than we have yet seen it. Altogether we can confidently recommend the work to our readers: we believe they will find it one which deserves to be valued even beyond any praise which we have deemed it our duty to accord to a volume of both great medical and great moral merit.

Notes on the Surgery of the War in the Crimea, with Remarks on the Treatment of Gunshot Wounds. By George H. B. Macleod, M. D., F.R.C.S., &c. &c. London: Churchill, 1858. 8vo, pp. 439.

The opportunities which Dr. Macleod enjoyed whilst serving as a medical officer attached to the British army at Smyrna, Constantinople, Scutari, and in the Crimea, he has turned to good account, having embodied his observations not only in a readable, but in a really useful book, for such is the work before us. "A great war," our author commences by saying in his preface, "is a great epoch in the onward march of surgical science, when the slowly elaborated teachings of civil life are tested on a grand scale in the presence of representatives from every school. Unfortunately, however, the vicissitudes, hardships, and uncertainties of a campaign, present difficulties of

no small moment to the collection and arrangement of observations;" and "the shortness and abrupt termination of this war were unquestionably a great loss to the advancement of surgery, however great was the gain otherwise to humanity." The difficulties to be anticipated by a State long at peace, and whose military organization had consequently become defective, had but been overcome; and "just when in a position to investigate many questions with precision and advantage, the opportunity passed away."

The Crimean war, however, had, for England, this great advantage, viz., that it proved to demonstration the evils of inefficient military organization, and the utter necessity which exists for paying strict attention to all those considerations which the purely military authorities had come to consider as only of secondary moment; and Dr. Macleod has embodied with his "Notes on the Surgery of the War" some very valuable remarks on points of even more value than the treatment of injury, for he has embraced in his volume those subjects which, rightly attended to, will save life on a large scale, by the prevention of disease. The contents of the volume before us are divided into twelve chapters, and, of these, three are devoted to matters of camp-life, and campaigning, and war in general.

The first chapter includes "the history and physical characters of the Crimea; its climate and geology; the changes of the seasons during the occupation of the Allies; the steppe lands of the interior; vegetation and resources of the country; the natives and their diseases."

The second chapter comprises the consideration of the "drainage of the camp, water supply; latrines; food; cooking; fuel; clothing; housing and duty;" with the effects of all these combined on the health and diseases of the soldiers. Next the arrangements for the treatment of the sick and wounded, viz.:—Hospitals; the distribution of the sick; nursing, male and female; transport.

The third chapter carries the reader back to "the campaign in Bulgaria, and its effects on the subsequent health of the troops; the diseases which appeared there, subsequently, during the flank march, as well as afterwards in the camp before Sebastopol."

We shall first direct attention to the second of these chapters—that on camp management. It opens with a brief description of the site or ground occupied by the British army, and then enters at once into the consideration of practical points in connexion with the subjects before enumerated. In

reference to the formation of latrines (the curse and pest of a camp if badly placed and constructed), Dr. Macleod observes:—"The unanticipated sojourn of the troops on the ground prevented that care being at first taken in the arrangement of the latrines and slaughter-houses, which is so desirable, and which was afterwards so abundantly shown. Those who visited the encampments of the Russians on the Mackenzie Heights after peace, will easily be able to understand what a miserable condition cantonments may be reduced to by the neglect of the necessary precautions on this head. So to allocate sites for these purposes as that they may be accessible to the camp, and at the same time sufficiently removed to prevent their contaminating the air, and that the locality they occupy shall not be required at any future period for the location of troops, calls for considerable forethought and arrangement." "And in connexion with the latrines," our author goes on to say, "there was yet another point in the hygiene of the camp which did not at first obtain sufficient attention: I refer to the burying of dead carcases."

The influence of the stench from these two causes—ill-placed and ill-contrived latrines, and putrid decomposing bodies—is most prejudicial to the health of any body of men, but particularly so to those who are subjected at the same time to other depressing agencies, such as over-work, bad food, and insufficient clothing, which have been the accompaniments of past, and may be those of any future campaign. We therefore think it most desirable for the welfare of troops that the suggestion of Mr. Ranald Martin should be in every instance acted upon, viz., of having attached to the person of the General in command an efficient medical officer as "officer of health," who should be so far in the confidence of the head of the military command as to receive from him his views in relation to the strategical position of every spot selected for encamping ground—that is to say, a general idea of what his steps would be if forced by the enemy to entrench, and hold it for any lengthened time. Proper precautions would then be adopted in every instance, and a system of the most perfect kind would soon be established in our army in reference to points which hitherto have not received attention until they have forced themselves upon the notice of those in power.

The remarks of Dr. Macleod upon the food, fuel, clothing, &c., are equally to the point, but add only further and too sad confirmation to all that has been said and written upon the miseries of the Crimea. Those days are gone, but let them not be forgotten, and, before passing on to other portions of the

work, we would beg our readers' attention to the summary here given, recollecting that nought but carelessness and want of providence on the part of the English nation reduced its army to the condition here presented:—

"From all that has been said, then, on the housing, clothing, food, and fuel provided for the soldiers, and the killing toil exacted from them during that period of the war which had most influence on their health and after history, the sad picture may be formed of their condition in the Crimea. Day after day passed in severe bodily exertion and anxious watching—one moment digging laboriously in extending the approaches, and the next with arms in hand repelling the assaulting enemy; almost always wet; exposed without cover to the drenching rain and soaking snow, the keen frost and biting wind; standing for days in wet mud; constantly either unnaturally excited or depressed; ever in danger, and without hope of a change; their dirty humid clothes in rags, their bodies covered with loathsome vermin which seemed to grow out of their very flesh; no comforts in their wind-pierced tents on the bleak plateau; no fires, unless, weary and foot-sore as they were, they dug beneath the snow-covered sod for wet roots wherewith to kindle a feeble and tantalizing blaze; without food till, after hours of persevering exertion, they managed to half cook their unpalatable ration over their winking fire; huddled into a crowded tent to pass the night in a close noisome atmosphere, on the oozy ground, covered by the same blanket which protected them in the wet and muddy trenches; longing for the morning, though its early dawn was signalled by the bugle sound which called them to a renewal of that dread task whose severity made them yet again sigh, 'would to God it were night!' This sketch is no exaggeration. It is true, though difficult to be realized even now by those who themselves saw it. Can we, then, find anywhere else in reality—nay, can we by the utmost stretch of imagination conceive—a more fruitful field for the seeds of disease, or the harvest of death, than is here presented to us in the camp of the weary, anxious-minded soldiers who fought so gallantly, endured so constantly, or died so nobly, and who now consecrate by their humble graves the green hill sides and lonely valleys of the Crimea?"

With reference to Hospitals and the treatment of the sick and wounded in war, the remarks of Dr. Macleod, in relation to the English system of having regimental establishments for the men of each corps under their own medical officers are judicious and correct, he says:—

"According to this plan, the soldiers are kept, when sick, in hospitals which belong to their regiments, in place of being transferred to general hospitals established to receive the common sick of the army. The discussion is an old one as to whether the system

which has been always followed by us, except in times of great necessity, or that of general hospitals, the plan adopted by the French and other continental nations during war, is the best. I do not intend here to review the question, but would merely remark that, after fairly weighing the subject, I think the regimental hospital arrangement presents the greatest advantages. One strong claim on our support is, that the surgeon of the corps must be greatly better acquainted with his men, their character and habits, and thus be more able to treat them, as well as more able to detect imposture if attempted, than the medical attendant who probably never saw them till they present themselves to him as patients. The men are by this system also kept among their comrades—no small advantage to them—and thus their minds are cheered by the companionship of friends. More time and attendance, too, can be bestowed on the sick in these small hospitals, from the proportion of medical attendants and orderlies being in general much above what it is in the larger establishments, and from the responsibility being, if possible, more binding on the regimental surgeon, and the stock of comforts proportionally greater and more regularly supplied, from the resources of the whole regiment being at his command. In regimental hospitals it is well known that wounds heal more satisfactorily, and that purulent infection and gangrene occur more rarely, most probably because, from the mixture of cases which takes place in them, that segregation of suppurating wounds which is so apt to occur in general hospitals is avoided.

"On the other hand, a much larger staff is required when the hospitals are confined to regiments. A regiment numbering one thousand men on active service has a surgeon and three assistants attached to it, all of whom are rendered useless if their corps is not engaged, while a superabundance of work falls to the lot of those medical officers whose regiments have suffered severely in action. Hence it follows, that if the whole medical staff of the army was united and concentrated in general hospitals, less than one-half of the aggregate number of professional men would suffice for the service. In the French army, the proportion of medical officers to the strength is not a third so large as in ours.

"Besides, a more uniform system can be followed in the treatment of the cases, and the results of such treatment made more available both for instructing the younger surgeons, and also for the promotion of science, when conducted in large hospitals, than it can ever be in small detached establishments. The cost of administration also will be greatly diminished by concentration, and the whole economy of the army, as regards the management and transport of the sick, easier arranged and much more efficiently conducted. But with all this—and it is a very great deal—to be said in favour of large hospitals, yet I unhesitatingly think that, tried by the one great test of the saving and prolongation of life, which in our army at least is the chief criterion of advantage, the regimental hospital system is the best."

And, as if to contrast the practical working of the two systems of immediate attendance in the hospital of his corps, or removal and deferred attendance in the reserve hospitals in the rear, the author gives an outline of the condition of an individual wounded, early and late, in the campaign, thus:—

"At two epochs of the siege, arrangements totally different were, from necessity, followed in the treatment and distribution of the sick and wounded. It can easily be understood what a difference such arrangements must have made in the mortality, after the receipt of such an injury as a compound fracture. How different it was to keep a patient so circumstanced in a comfortable hospital in camp, and treat him among his comrades, from having him transferred, immediately after the accident, in a jolting carriage over roads full of mud-pits, and in the close hold of a crowded transport over a sea proverbially stormy, to be disembarked, in a manner the most faulty conceivable, at Scutari, admitted among strangers into a great hospital at a period when the fever occasioned by his wound was at its height, and placed under the care of a surgeon who knew nothing of his previous history, or the particulars of his case."

The system of nursing for an army in time of war next engages his attention, and, respecting the employment of females, he states what any man of experience would countersign:—

"I have no hesitation in giving my adhesion to the practicability and usefulness of this proposal, if conducted with discretion and caution. The great difficulty will always be to find persons fitted to undertake the duty. They must combine a vigorous body with a well balanced mind,—a mind untinctured by vain romance, but endowed with religious feelings of such depth as will enable them to undertake their trying duties. There must be the most perfect subjection to superiors,—no fussiness or nervousness of disposition,—calmness in danger, and, above all, a large stock both of common sense and of cheerfulness. That most injudicious selections were, in various instances, made for service in our hospitals, few, who had much to do with these establishments, will deny; but every unprejudiced and attentive observer must acknowledge the vast amount of good which the female nurses accomplished, and the service which they were capable of performing when judiciously selected and properly organized." . . . "In military, more than in civil hospitals, are the kindly sympathy and gentle care of a woman required. The soldier has no crowd of anxious friends or relatives to visit his sick bed; but, oppressed by a sense of loneliness in a foreign land, a feeling of which he is little conscious when in health, he clings to those gentle offices of kindness which a woman can alone bestow. In the camp hospitals, with an army in the field, men alone should be employed as nurses; but, in the more fixed hospitals in the rere,

lady superintendents and under-nurses should, in my opinion, always be added to the regular staff."

To the views here expressed by Dr. Macleod we fully give our assent, provided lady superintendents and under-nurses, such as are specified by him, can be procured. The experiment, certainly, under Miss Nightingale succeeded well at Scutari, and should be tried again on the plan then carried out, and here set forth by the author, and their duties confined as follows:—

"Their attention should be limited to the bad cases. There should be a lady superintendent over each division of the hospital, responsible to the surgeon as well as to her own lady chief. There should be a store of extras under her charge, distributable on requisition from the medical attendant, and which depôt should be filled up to a certain quantity weekly, the 'sister' being held accountable for the contents. Wine and all extras should pass through her hands, and the management of the extra kitchen should be under her sole control."

Physic in the form of tonics during a lingering convalescence may be very desirable and very well in its way, but, as compared with nourishment (properly prepared), it is trash. At Scutari, prior to the placing of the kitchen department under female superintendence, "men turned away with loathing from the coarse, half-cooked, tough morsel" given to them, but rejected and left untouched. No sooner, however, was food suitable for the sick man's stomach and condition nicely prepared and served to him, than the "treatment," which before was futile, shortly told, and it was here that "the female nursing saved so many lives."

Passing from these most interesting and important subjects, we come to the surgical portion of the work. It treats, firstly, of the peculiarities of gunshot wounds in their various forms, with their complications and their general treatment, including primary and secondary hemorrhage, tetanus and gangrene, with erysipelas and frost-bite. The special injuries of warfare are then considered under their respective localities, as of the head, face, and chest; abdomen and bladder; fractures of the extremities, and wounds of joints; amputation of the one and excision of the other are well touched upon; and the use of chloroform in war fully considered. An appendix is added, which, under nine divisions, embraces many subjects of interest connected with the Crimean war. The first portion is devoted to the "Geology of the Crimea;" the next, to "thermometric observations;" the third, to the "weight and nutritive value

of the soldiers' rations." Then follow two chapters illustrating the military duty performed in the Crimea, and the "routine of duty in particular regiments." Next, "a table of weight of balls used by the belligerents;" then tables "showing the mortality following the greater amputations for gunshot wounds and accidents;" concluding with two interesting *resumés*,—the one of M. Scrive's work on "The Losses of the French in the Crimea;" and the other of the "Report of the British Government on the Surgery of the War in the Crimea."

Before entering upon the consideration of the injuries received by gunshot missiles, Dr. Macleod makes some pertinent observations upon their action and effects, especially in reference to the increased destructive properties of the conical over the old spherical bullet. Speaking of the "splitting of balls on the edge of bone, as, for instance, the edge of the tibia, or on the bridge of the nose, or on the humerus," he says, "there were fewer illustrations during the late war than usually occur during a campaign, from the comparatively little employment of the round ball. I do not believe that the conical ball, with its immense force of propulsion, could be so split."

The view here taken by the author, as to the reason of the splitting of the round ball, and the non-splitting of the conical, is not, we believe, the correct one. It is not in the force of propulsion, but in the composition of the bullet itself; the conical bullet being struck out of cold compressed lead, whilst the round ball is cast liquid, and crystallizes in cooling, and it is from the crystallization that this disposition to split into two divisions arises. Why the conical ball occasionally splits on the head is easily accounted for. It does so when striking obliquely, or in that direction that the outer table of the skull is entered at a very acute angle, and it is on the sharp cutting edge thus formed that the bullet is either sliced through, or, as we have seen in other cases, partially divided, one portion entering the cranium, and the other lying on the bone outside.

The surgical treatment of the principal injuries of war has by Dr. Macleod been carefully dwelt upon, and the views entertained by him upon them fairly and decidedly given. As an illustration, we may adduce our author's expression of opinion upon the treatment of secondary hemorrhage consequent upon a gunshot injury. He says:—

"In all such cases the second bleeding should determine active interference. I say the second bleeding, as it very often happens, that when hemorrhage has taken place once, even to a considerable

extent, and evidently from a vessel of large caliber, it never recurs. Many most striking instances of this have come under my notice. But though more than even this is true, and that frequently blood thrown out repeatedly is spontaneously arrested, still the great preponderance of cases in which it recurs in dangerous repetitions and quantities, as in the above instance, should cause us, I believe, to interfere on its second appearance, more particularly if the bleeding be in any quantity. Not to interfere unless the vessel is bleeding, must not always be understood too literally, or we will often be prevented from performing the operation till our patient is beyond our help. The hemorrhage recurs over and over again, and the surgeon, though as near as is practicable, arrives only in time to see the bed drenched, and the patient and attendant intensely alarmed. There is at the moment no bleeding, and he vainly hopes there will be no return; and so on goes the game between ebbing life and menacing death, the loss not great at each time, but mighty in its sum, till all assistance is useless. Many a valuable life has thus been lost which might have been saved by a more decided course of action.

"Few cases are more embarrassing than these to the surgeon, or require more determination, and well-considered resolution to conduct to a successful issue. One is averse to act when the immediate necessity has passed; and unless we be guided in our course by a knowledge of general results, more than by the immediate case in hand, we will lose many a patient. These cases form an exception to the rational surgery of the day, which prescribes inaction, unless there be immediate call for interference."

The Physician for All: his Philosophy, his Experience, and his Mission. By John Spurgin, M.D., F.R.C.P., &c. Second Curriculum. London: Hodgson. 1857. 8vo, pp. 229.

The present work is a continuation of an essay from the pen of the same author, a review of which will be found in our twentieth volume. In noticing that treatise, we entered at some length into the general views therein advanced upon the comprehensive subject of the constitution of the blood. In this second curriculum we find the author resuming the same theme, which he does with a view, as indicated towards the conclusion of his former work, of—

"Gradually introducing the interesting subject of the blood's *determination*, embracing, as it does, the organization to which it is determined for general and specific uses."

Ever keeping in view the "five points of all medical consideration," to wit, the nature, constitution, determination, con-

tinuity, and quantity of the blood, upon which the welfare of the body depends, the author commences this essay with the subject of tubercular degeneration, and proceeds at once to open the question in all its bearings, laying, however, particular stress upon what is of paramount value to the popular reader, to whom in a great measure the book appears to be addressed, namely, the social, educational, and even national precautions which should be observed in order to diminish, as far as man can diminish, the development and spread of this perverted constitution of the blood. The considerations thence arising occupy a primary and prominent place in the essay before us. The practical application of such measures as experience has shown to afford the most rational basis of treatment in combating, at least for a time, many of the early threatenings of tubercular development, is illustrated by some well-chosen cases. Lest, however, the perusal of these cases and the accompanying remarks should lead the reader astray as to the positive curability of consumption, a matter which is apt to be greedily caught hold of by those who would fain wish to construe a mitigation of symptoms into a complete removal of their causes, and interpret a prolongation of life under comparatively favourable circumstances as securing an utter eradication of an organic mischief, the author endeavours to remove all doubt in the following plain terms:—

"To work upon the curability of consumption is to prey upon the pardonable credulity of the hopeful at the cost of honesty and fair dealing. Such workers must be content to take a discreditable stamp, and to be repudiated by the faculty who do not profess to reorganize a disorganized portion of the lungs. Hair, nails, skin, are reproduced; blood-vessels, &c., may grow in the way of extension from their sound correlatives; but degenerating structures, such as tuberculated lungs, can never be restored—they may be separated from sounder parts, and adhesions, cicatrices, or scars, may be exhibited. This happy event, however, by no means sanctions any party in his professing to cure consumption. No one, indeed, can be honest who holds to such profession in order to win practice."

We cannot but think that the author speaks rather confidently of the beneficial effects of early blood-letting in the hemoptysis of phthisical patients, and that, in reference to the neglect of this and some other measures of prevention, the following conclusion is of somewhat too general a character:—

"It is not wonderful, therefore," he says, "that insanity in divers forms, and diseases of the heart and of the bronchial tubes (bronchitis), and of the kidneys, of the liver and skin, should so

abound, nor that sudden death should be a frequent visitation;—still less, that uterine maladies and their concomitants should be so rife, to burden the shelves of our medical libraries with endless treatises on endless varieties of these secondary complaints, and to render a female and a delicacy of constitution almost synonymous terms," &c.

His general remarks, however, on the broad principles of treatment, especially as regards what may be considered as hygienic measures, are on the whole highly judicious, while he points out very clearly the relation and the connexion which subsist among a variety of derangements of the system, giving rise to innumerable complaints of local habitation, but proceeding from a disordered constitution of the blood. He animadverts very strongly upon the quackery of setting about to *cure* all these so-called diseases without reference to enlarged views or principles of treatment, and without recognising the necessity of directing primary attention to the constitutional disorder whence proceed most of these symptoms. But not only is quackery assailed, but "pure" surgery is allowed to come in for its share of obloquy, at least it would almost appear from the following extracts that the author includes it in the same category with ignorant and reckless empiricism. We should have thought, for instance, that the danger of suddenly checking a long-established drain, even by means of the most dexterous surgical procedure, was a matter which was pretty generally recognised, and yet we find that much ignorance is reported to be afloat regarding the precautions to be observed in such cases. The subject is thus introduced:—

"If, as the surgeon, he can also act the part of the physician, he is a valuable member of society, and highly deserving of honour and confidence as the general practitioner. *Not unfrequently*, however, has a 'Physician for All' witnessed the evils of the separation of the above qualifications in practice."

Reference is then made to a case in point, recorded in the first Curriculum; to which is appended, by way of further illustration, a case of long-continued hemorrhoidal discharge; a ligature was applied successfully; the patient received no instructions about an altered management of himself under the altered circumstances of his constitution; cerebral lesion supervened, and for thirteen years afterwards the patient was hemiplegic. We quite agree with the writer that, had this man's constitution been duly considered, he might have been spared the blighting consequences of the want of skilful precaution on the part of the operator, but we do not altogether like the way in which these and similar cases are made, in his subsequent

reflections, the ground of an unsparing application of epithets which, to say the least, have the appearance of unnecessary illiberality; for example, in such phrases as these :—

"The officious meddling of unaided surgery;"—"*surgical* conduct that has no regard to *medical* caution." And again: "The results of the operations of surgery may teem with satisfaction for the month, even as expediency may be popular for a parliamentary session, but they will often bring irreparable mischief upon a constitution that, of the physician's skill, would have gathered health from among the weeds of disordering insemination."

A few pages further on, and the tonsil-cutters are favoured by the author with "a bit of his mind;" the passage, however, is too long for extraction, and such of our friends, therefore, as may still be partial to these excisions are referred to the work, page 41. The next kind of practice which comes in for a few hard knocks is specialism. For example, in speaking of the application of tests, caloric and litmus paper, he says:—

"My experience has given me to know that the specialists, who are always at work with them" (i. e. tests, &c.) "are very indifferent physicians, for they look at disease in the reverse and not in the direct way. Whereas they should know a disorder before they prescribe for it, especially as patients do not often have an evacuation of any sort to exhibit for their guidance at the outset of the treatment [?]; and besides, judging from their writings, specialists are perpetually shifting from one kind of treatment to another, and the latest author superseding that of his predecessor, to say nothing of each specialist having his special treatment to compete with that of all others of his class."

Again:—

"In a few words it may be remarked that a disordered condition of the blood is seldom taken in hand for correction in time to prevent its precipitation upon some one organ or other, to its peril, and even to its destruction. For pathology to occupy its right position, the constitution of the blood itself must be primarily regarded, so that the business of specialty may not encroach upon the faculty of medicine, to its ultimate degradation and banishment as such. Not a special case is recorded by a specialist, but what justifies me in upholding the full prerogative of the physician, and in repudiating the practice of the wholesale dismemberment of the faculty now so much in vogue. . . . A college of specialists would indeed be a collection of humbug, and identified with the sophistry that would keep it spellbound by the slime of its fallacies," &c. "The operation of this fallacy would secure some half-dozen of a college the monopoly which would impoverish the rest, even as monopolies of every kind obstruct the general prosperity."

The author then proceeds to introduce a "case in point" —this was one of continued fever, with great hepatic and pulmonary congestions, loathing and rejection of food, cerebral oppression and utter prostration of bodily strength; there were, in addition, involuntary discharges of the excretions, abrasion of the nates, and album*e*nuria (*sic*), the patient being sixty-two years of age. After giving a careful summary of the treatment successfully adopted by a "physician for all," he winds up thus:—

"In such a case a mere specialist would have been as a Thames pilot essaying the navigation of the wide ocean."

In all fairness, however, to the author, and notwithstanding our disapproval of the occasional ebullitions of disparaging sentiments in a popular work of the kind before us, we are happy to be able to speak of this treatise, as a whole, in terms of favourable commendation. The pretensions of allopathic medicine are even now upon their trial, and the most superficial glance at the unscrupulous efforts which are being made on many sides to depreciate these pretensions should suffice to arouse the attention of the student and junior practitioner to the vital importance of cultivating a spirit of rational and philosophic inquiry, and of diligently investigating those fundamental principles which can furnish the only reliable basis of a sound diagnosis and a successful plan of treatment. One extract more, and we have done:—

"What a tide has been setting in against the physician and his high prerogative,—a tide that has brought upon its stream and surface all manner of noxious things to impair his name, whilst it has strained every fibre or link of his attachments to force him from his ground. The physician, as such, must adhere to order; he must insist upon it; he must exemplify it; and sad it is when there is but the name, the form, the body, and not the spirit in one, or in many of his order. There never was a time in the world's history when the province of the physician was so assailed as now, nor with such bold and insolent effrontery. What an invasion do we not behold upon the fields of order and the plains of truth, to which he, as the student of nature, lays claim, and beyond which he cannot go without the forfeiture of character and confidence. That cannot be orderly nor true that is not natural. And when all things are tried by this test, such of them drop away from the confidence of the community by the action of experience as are in reality disorderly and false. This is the fate that awaits these revivals of old schemes and these new cheats upon old humanity. I have seen the rise and fall of some strange dodges in my day, and I am prepared to witness more events of this perverting nature, if not the decline of one or more of the

present clap-trap fooleries, in illustration and corroboration of my argument. The existence of such pretences to the eradication of evil, or to the cure of disease, irrespective of study, of discipline, and their recognisances, is a scandal upon the faculty of physic, that exists expressly to maintain and supply these requisites. The very toleration of such pretences by the conventions and customs of society, notwithstanding their repudiation by the State and its laws, argues a serious defect in the *kind* of education which the initiating in knowledge are saluted with and nourished by. Such an education must be frothy and watery, and not rich and substantial for the mind's vigour, otherwise this would resist the 'witchcraft' that besets it from within and from without, and adhere to the facts of experience, to the exclusion of the beguiling voice of the imagination. Nor need we wonder at the gain that accrues to such pretenders to an art that exceeds the possibilities of the educated and respectable of the medical faculty; for credulity is the first effect of such mental weakness, deception the second, and impoverishment the third. Oh! how I have known and seen weak people fleeced! In all the range from chiropody to palsy, from obesity to consumption, a plucking process is going on, which renders general and medical benevolence an indispensable provision, to compensate for the spoliation and wrong that befall honesty and obedience. I raise my voice indignantly against this debasing state of society, according to my privilege and my duty, nor will I conceal my shame at witnessing the lack of spirit and unity which the profession in Great Britain evinces to do the same. Order of life is the basis, and the truth of fact the superstructure of the medical faculty, even as of all human faculty, for safety and perfection in all time and to all eternity. On these depend health, recovery from sickness, and lasting happiness. The physician is their voluntary and their acknowledged representative, and his counsels are as meet for monarchs, priests, and lawgivers, as they are for subjects, laymen, and citizens. What is not orderly with reference to the welfare of all conditions of men, he discountenances as unfavourable to life; and what is not true in relation to the testimony supplied by the facts of nature, he rejects as false to truth: and by virtue of this his profession he exemplifies the good constitution which he aims at establishing, as a permanent institution for myriads to enjoy, and for myriads upon myriads yet unborn to be determined unto, according to their ability and destiny, as will be demonstrated in the forthcoming *Third Curriculum*."

Alcohol: its Place and Power. By James Miller, F.R.S.E., F.R.C.S.E., &c., &c. Fifteenth Thousand. Glasgow: Scottish Temperance League. London: Houlston and Wright, and W. Tweedie. 1858. 16mo, pp. 151.

This little work is addressed strictly to the general public among whom it has already obtained a very wide circulation;

at the same time, it is eminently calculated to interest and instruct the medical practitioner.

It is of the highest importance that the public should be rightly informed on the subject of which it treats, and the author has proved himself to be unusually well qualified for this difficult task. His knowledge is accurate, his style attractive and elegant, and his illustration fertile and apposite. Evidently prompted by benevolent feelings, yet he submits his opinions with a moderation that on this subject cannot be too highly commended. His book in this respect contrasts very favourably with many popular works on temperance, whose writers are more solicitous to give piquant force to the prejudices of the class for whom they write, than to teach valuable truths, for the successful investigation of which, indeed, they are, for the most part, quite unprepared by previous training.

The uses of alcohol in medicine are admirably described, and the author's views on its mode of action obtain our cordial approval. It is only when he approaches the hygienic section of his subject that we find it necessary to express dissent. Mr. Miller leans to total abstinence, which we believe to be wrong in theory, and often mischievous in practice; but we so recently discussed the whole question of temperance and total abstinence, that the reader will not expect us to open it anew on the present occasion; and we are content to state that the perusal of Mr. Miller's book only strengthens our conviction of the truth of the principles advanced in the review of the works of Carpenter and Thomson[a]. It is, however, only just to Mr. Miller to state, that he assigns to spirit a very high place as a medicine, and is very far from ignoring its value in counteracting the wear and tear of body and mind in the struggle of civilized life.

Mr. Miller divides food into the heat-making and nutritive, and places alcohol in the first division, following in this the example of Liebig, who here, as in his explanations of the action of cod-liver oil in phthisis, and of iron in chlorosis, allowed his imagination to travel far from the region of dull fact. Is spirit nutritive food or not? is an exceedingly difficult question, and does not admit at present of a precise answer. We need more observation and more experiment. Much that is written on it is highly conjectural, and wanting in the firm basis of fact that is so readily assumed for it. There is good reason to believe that alcohol is not all "burned" away, and it is an everyday observation that its

[a] See vol. x. of our present Series, page 150.

habitual use lessens the need for food, and, at the same time, causes plethora. There is no denying the frequent coincidence of these two results. Now, either the spirit must cause the better making into blood of the smaller quantity of food taken, or is itself assimilated and used to build the framework of the body. It probably acts in both ways—both as a true *medicinal* tonic, and as a tissue-forming food. The elements may be used to make many of the constituents of the body, but its composition renders likely its conversion into oil—and alcoholic plethora shows especially an increase of fat.

Too much importance has been assigned to this question of the assimilation or non-assimilation of alcohol. That it nourishes the body, cannot justify or lessen the evils of its abuse; and the advocates of temperance have most unwisely strained science in their anxiety to prove that it does not. Alcohol is bad enough, and has sufficient, in all conscience, to answer for, and the cause of temperance is not promoted, but seriously hindered, by exaggerating its evils and ignoring its virtues.

It is said to check the waste of tissue—but if every display of function involves in the organ a necessary loss of substance, the exalted functional activity produced by an alcoholic stimulant must be accompanied by increased wear of structure.

In connexion with temperance there is a little point, the importance of which has been overlooked. We allude to the want of warm non-alcoholic dinner drinks. Spirituous liquors are often taken with or after dinner—not as food, nor as a luxury, but simply because they make digestion easier than cold water. A certain warmth is necessary to digestion. Persons of feeble digestion have small power of making heat, and cold water with the meal is injurious, by enfeebling the stomach and unduly depressing the temperature of its contents. We have seen many patients in whom these effects of cold water were marked, and this is the reason why some use tea or coffee, and others, negus or punch, immediately after dinner. Tea three times a day is not desirable. We have found warm aromatic drinks with this meal most valuable, in making easy the digestion of atonic dyspeptics, and of that large class of town livers whose bodies and stomachs are weak, but who do not consider themselves within the limits of disease—and we believe that the more general introduction and use of such drinks would materially help the cause of temperance.

In the following specimen of the author's style, Mr. Miller

describes, very happily, the true place of alcohol in the treatment of fever:—

"In certain fevers—such as typhus—there is marked and dangerous tendency to nervous depression; under which, if unchecked, the vital functions become faint, and are apt to cease. Practitioners have in consequence learnt, in certain cases, and still more in certain epidemics, to anticipate and oppose this evil, by an early and judicious use of stimulants. What! wine and brandy in fever! Most certainly. Then is the time to see the use and value of alcohol. There is nothing in nature without its use. Scorpions, snakes, fleas, bugs, and such like unpleasant and apparently unprofitable specimens of zoology, may sometimes puzzle the ordinary observer who would define their exact use in society; yet, bewildered though he be, he may rest satisfied of this, that their operations *are* beneficial, *sometimes* and *somehow*. And so of alcohol. Often it is most noxious; and looking at the wide-spread mischief that it is ever working around them, superficial observers may be tempted to think that it is only evil, and evil continually. But in this, as in other things, the saying of the wise man comes true, 'To everything there is a season, and a time to every purpose under the heaven.' While standing at the bedside of a fever case—urgent, yet doing well under wine—the ship in a a terrible sea, yet obeying the helm in its every turn, and steering steadily—I have often wished to have a tippler or a drunkard on one side of me, with a 'fanatical teetotaller' on the other, in order that I might have the pleasure of saying, 'There, gentlemen, there is a glorious example of the true use of wine.' The man is taking a tablespoonful of sherry, every hour, or every two hours—or a somewhat larger allowance of claret, or a smaller proportion of brandy,—the form and dose of the alcohol varying to meet the varying phases of the disease; and at every dose you can almost see—far more truly than you can see grass growing in a warm summer shower, after long drought—health returning to the otherwise sinking frame:—the cheek less flushed, the skin more cool, the eye more steady and clear, the pulse less frequent and more strong, the tongue more moist and clean, the breathing easier, the sensations all more comfortable. What is the alcohol doing? Not feeding the man in reality, as one might be apt to suppose; but stimulating the nervous system; spurring the nerves and nerve-centres, and keeping them awake, when otherwise they would go to sleep, and leave the vital functions, first to flag, and then to fail utterly—going to sleep too. The nervous power is kept active, and this excites the vital force to work also. 'But the vital strength,' you will object, 'must be soon used up in this way—exhausted.' There is a risk of that, no doubt; but better to run that risk, than let all perish at once without an effort. And by and by the stomach will be enabled to receive some *food* again, and to digest it too; whereby

the vital strength will be sustained and replenished, so as to meet the strain. The steamship in the storm—to take up our illustration once more—has but a limited supply of coal; and a vigilant production of steam, to work the engines, as she labours in the sea, will tend ultimately to exhaustion of the store, no doubt; but still the only chance of safety lies in 'cracking on,' with the hope that thereby she may be enabled to reach some friendly shelter, to both 'coal and water' for the rest of her way. . . . .

"Of course the beneficial effect will be most marked in those who, when in health, are least in the habit of taking alcohol in their ordinary beverages. In such persons each spoonful tells with a vigorous stroke on the virgin nervous centres; whereas, in the 'seasoned' organism much of the alcohol will be wasted in bringing up the nerves to their ordinary 'par,' and even then the stimulant effect cannot be expected to prove so successful. Slight touches of the whip are sufficient to keep the fresh horse np to his traces; but the scourge must be laid heavily on the jaded hack, and withal there will be infinitely less power in the pull that follows."

Mr. Miller's book is worthy of his distinguished position and high reputation, and is well fitted to enlighten his fellow men, and promote the good cause of temperance.

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1. *Observations on Naval Hygiene and Scurvy, more particularly as the latter appeared during a Polar Voyage.* By Alexander Armstrong, M. D., R. N., &c. London: Churchill, 1858. 8vo, pp. 117.

2. *Hygiene; or, Health as depending upon the Conditions of the Atmosphere, Food and Drink, Motion and Rest, Sleep and Wakefulness, Secretions, Excretions, and Retentions, Mental Emotions, Clothing, Bathing, &c.* By James H. Pickford, M. D. London: Churchill. 1858. 8vo, pp. 290.

3. *Sanitary Science: its Past and Present State. The "Address in Medicine," delivered at the twenty-fifth Meeting of the British Medical Association, held at Nottingham July* 28, 29, *and* 30, 1857. By Wm. Tindall Robertson, M. D., Edinburgh, Extr. L. R. C. P. London, &c., &c. London: Walton and Maberly. Pamphlet, pp. 32.

1. Happily, the disease treated of in the first book which stands at the head of this notice is now comparatively very rare, and the seafaring man is but very seldom, indeed, subjected to the dreadful sufferings of scurvy. All who have read the voyages of Anson and of the early circumnavigators will recollect the terrible scenes therein depicted, when the poor exhausted

crews, worn out by hardship and toil, and without any nourishing food, fell victims to the then dire scourge of our royal and maritime navies. At the time referred to there were several causes which produced the sad ravages of sea-scurvy, and all of which arose from either a total disregard or an unavoidable non-application of sanitary principles. Since those days, however, these important principles have made themselves understood, and dryness, ventilation, personal cleanliness, wholesome food, and proper clothing have been recognised as essential to health on shipboard. The changes that have taken place in maritime matters since the time of the early navigators have been, indeed, of vital importance to all "who go down to the sea in ships." Rarely now does the pestilential fever, dysentery, or scurvy attack our fleets, and when a single vessel suffers from any of these diseases, it is almost certain that some local exciting agent exists, which should not; that some sanitary neglect has been perpetrated or permitted; and hence the penalty which is paid by the passengers or crew. On board her Majesty's ships of war the strictest regard is paid to cleanliness and having everything in beautiful order; and during the last thirty years, especially, health-preserving regulations have been usually adopted; so that the mortality within the last forty years has been reduced from 30 to about 13 per 1000 men per annum. Seventy years since, the mortality was so high as 123 in the thousand! This reformation has been gradually brought about, and we may hope that by perseverance in observing the principles of hygiene, a still greater immunity from disease may be obtained among our seamen, the bulwarks of our country. In fact, the authorities should spare no trouble or expense in maintaining the health of our sailors at the highest possible standard; both policy and humanity indicate this as the only wise course—and hence every suggestion which is based upon experience and sound principles should be adopted, carried out in the navy, and enforced by legal provision upon the attention of owners and captains in the mercantile marine.

Among the many suggestive works that have been published relative to hygiene, few claim more attention than the excellent book now under consideration, from the pen of Dr. Armstrong, R. N., well known as the author of "A Personal Narrative of the Discovery of the North-West Passage." His admirable observations on naval hygiene and scurvy are deserving of all praise, and are calculated to do a vast deal of good; they are especially worthy the notice of the young surgeons of the navy, who throughout the pages of the publication will find most important information and useful hints; and as

the health of the seaman so much depends upon the skill and enlightened action of the medical officer, it is the duty of every one who intends to enter the medical department of the navy to make himself thoroughly master of every matter that bears upon the sanitary condition of a ship's company in every part of the world.

In the pages of Dr. Armstrong's little work, as we have said, will be found many excellent suggestions for the preservation of health on ship-board, and admirable rules for the prevention of scurvy, and for its treatment, should it unhappily arise. We quite agree with every one of the views expressed by the intelligent author, and we cannot do better than urge every one of our readers to procure the book and peruse it carefully, and each will be enabled to see how completely sanitary principles, when duly enforced and administered, can preserve the health under circumstances the most urgent and trying. We cannot dismiss our brief notice of Dr. Armstrong's excellent treatise without referring to the honourable testimony he bears to the high character and professional attainments of his medical brethren of the navy. Under trying and discouraging circumstances, these officers have been the means of improving greatly the health of our seamen, and enforcing upon the authorities those prophylactic measures which have so materially and happily reduced the once awful mortality in the navy. Well may Dr. Armstrong say that "he is proud to belong to such a class of men;" he has proved himself worthy of ranking with the best of these reformers, and he has thus added another to the band of self-denying men who have done so much for a generous profession, and for a gallant and noble service.

2. The work of Dr. Pickford, as the title-page indicates, refers to many matters which more or less affect the health, and which, according to their several conditions, exercise a direct influence upon the human system. The book before us is "the *first part*" only of the subject, and "embraces the physics of the atmosphere, the seasons, temperature, rain, winds, and pressure; the respiration of plants and animals; the circulation of the blood; the chemistry of respiration and animal heat; infection, contagion, malaria, sewerage, drainage, ventilation, and climate, in connexion with disease." A second and a third part are promised. The part before us affords a very ample field for observation, and the author certainly has brought forward a very large amount of information, gleaned from almost every available source, and hence he has given to the world a compilation

of facts, and the result of research and experience; for he states in the preface that his "aim is to present to his professional brethren, to the medical student, and to the public at large, a plain and faithful transcript of accurate research, observation, and experience,—a simple and exact statement of facts and of admitted truths, together with such inferences and deductions as the subject may appear to warrant and demand." We are of opinion that a work of the kind was very much required, and that Dr. Pickford has rendered good service to the sanitary cause in bringing out the present publication; for, as he justly remarks:—

"On matters of hygiene we have in this country no standard authority, no single work, no condensed summary, no manual even to which to refer. Its immutable and life-giving principles are scattered through piles of volumes, rich in all the mysteries and wonders of creation and of science, but on which, be our resources ever so ample, we have often the greatest toil and utmost difficulty to fasten."

And again:—

"It is to endeavour to supply this desideratum that the writer has ventured to embody all that seems necessary to be acquired on those various subjects which make up and constitute hygiene."

There cannot be a question but that the author has expended a great amount of research in bringing together the component parts of his treatise, and that he has thus enabled the student to gain by easy means the condensed information which the work affords.

Sanitary science is still in its infancy as regards the action that many atmospheric and telluric phenomena exercise on animal life; and every contribution that endeavours to throw some light upon those hidden, but, doubtless, important and powerful influences, aims in the right direction, and helps to lay a foundation for knowledge that must become beneficial to man. We have only to recollect the rapid strides that have been made within the present century in removing many of the preventible causes of disease, and thus materially lessening the ratio of mortality, to be convinced that we have much in our power; but we must remember that much, very much, remains to be accomplished, and that we must labour in every successive year to open up a fairer path to the attainment of the great desideratum, that man shall die only in the "course of nature," yielding slowly to the immutable decree; and shall not perish untimely, as now, from causes which it is within his own power to avert or control. What a dark infatuation it seems,

that communities of men will prefer to fold their hands and quietly submit to be slaughtered, rather than battle against insane prejudices, and the thousand wrongs which the vested interests and the so-called legal rights of the few inflict upon the multitude! Against this apathy, this madness, the members of the medical profession have been long contending; their efforts have been crowned, in many respects, with signal success; but a vast work still lies before them, and they must not relax in their efforts: the cause is holy, the object to be attained glorious; hence, every one of us, with the smallest germ of philanthropy in his bosom will arouse to the work! Our warfare is against the preventible causes of death—the battle is for "dear life" itself! Dr. Pickford's present and his promised works are in the right direction; the volume before us is written in a popular style, and will serve to teach the people much that they ought to understand. In fact, the public must be indoctrinated in the laws of hygiene before they can place a proper value upon sanitary improvements, and bestir them in overcoming that "*vis inertia*" which so impedes progressive improvements—especially in those matters which do not yield an immediate and palpable return for whatever outlay has been incurred.

3. "The past and present State of Sanitary Science" proves the hard struggle that the sanitary reformer has had in his philanthropic undertaking; and the pamphlet, "The Address in Medicine," from the pen of Dr. Tindal Robertson, shows very clearly that while much has been done, a vast deal remains to be accomplished still. Speaking of the cholera, he says:—

"The great pestilence had its mission, and at length passed away; but fever, consumption, and premature mortality are still completing their ravages amongst us. The great bulk of our working population are still placed in a condition unfavourable to health—a condition that forbids the preservation of the ordinary decencies and moralities of life; and it is only by rigid legislation and earnest diffusion of knowledge that the havoc can be stayed."

There cannot be a question of the truth of what is here enunciated; for it will require the aid of the most stringent measures, united with popular information, to overcome the opposition to sanitary improvement which is based on selfishness, apathy, and ignorance, and which will exist so long as vested interests in every abomination shall remain as the legalized right of the individual. The Legislature must deal

with such wrongs with an exterminating hand; and, now that they have been frightened from their propriety, and turned out of their own Houses *by the nose*, we may hope that they will not only wage war against the filthy Thames, but against every one of those sanitary evils that militate against the health, and, consequently, the happiness of the people. Each of the writers, whose works we have now under consideration, has laboured faithfully in the cause of sanitary science; each has demonstrated the evils which decimate society, and has likewise shown how those evils are to be met and overcome; and we cannot better conclude this brief notice than by recommending these volumes to the earnest attention of our brethren, and by advising them to disseminate the doctrines which they inculcate, as far as time and opportunity permit.

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1. *Börnehospitalet i Christiania i Aarene* 1855–1857. Ved Dr. F. C. Faye, Professor i Accouchement, Fruentimmer-og Börnesygdomme ved Universitetet, Overlæge ved Födselsstiftelsen og Börnehospitalet i Christiania. Christiania, Carl C. Werner og Comp. 1858. 8vo, pp. 88.

   Report of the Children's Hospital in Christiania for the Years 1855–1857. By Dr. F. C. Faye, Professor of Midwifery and of the Diseases of Women and Children to the University; Principal Physician to the Lying-in Institution, and to the Children's Hospital in Christiania. Reprint.

2. *Nogle Bemærkinger angaaende Betydningen og Behandlingen af enkelte Uterinaffectioner.* Af Prof. Dr. F. C. Faye.

   Some Remarks on the Nature and Treatment of certain Uterine Affections. By Professor Dr. F. C. Faye. Reprint, pp. 12.

3. *Statistisk Berättelse om Kolera-Epidemien i Stockholm år* 1855. Af Dr. C. G. Grähs. Stockholm: 1857. Norstedt och Söner. 8vo, pp. 25.

   Statistical Report of the Epidemic of Cholera in Stockholm in the Year 1855. By Dr. C. G. Grähs, Librarian to the Swedish Society of Physicians. With a Diagram.

4. *Den Sanitära Frågan.* Af Dr. C. G. Grähs. 8vo, pp. 23.

   The Sanitary Question. By Dr. C. G. Grähs. Reprint.

5. *Folkräkningen i Stor Brittannien år* 1851. By Dr. Grähs. 8vo, pp. 17.

   The Census of Great Britain of 1851. Reprint.

6. *Välgörenhets-Kongressen i Brüssel år* 1856. *Rapport afgifven till K. Ecklesiastik-Departementet.* Af Dr. C. G. Grähs. pp. 48.

   Report to the Royal Ecclesiastical Department of the Philanthropic Congress in Brussels in 1856. By Dr. C. G. Grähs. With a Diagram.

1. It having been some years ago determined that the Professor of Midwifery and Diseases of Women in the University of Norway, should add lectures on the diseases of children to his course, Professor Faye, as filling the Chair in question, felt it to be his duty to procure for his pupils the opportunity of combining clinical observation with the theoretical instruction they received. After some delay, the matter was brought before the Storthing, and in 1851 the necessary permission was obtained; and in the commencement of 1855 the building was ready to receive patients; a sum of 400 dollars for salaries and other expenses having been granted by the Storthing.

The hospital is two stories high, and is connected by a door with the auxiliary Lying-in Hospital, the lower story of which has no wards, so that this connexion cannot give rise to any injurious atmospheric communication. The wards in the Children's Hospital are seven in number, some of which are very small, and are intended for infants accompanied by their mothers. The other three rooms have from three to four beds, and the total accommodation is calculated at from twelve to fifteen patients, affording about 800 cubic feet of air to each. The author expresses a hope that a larger and more suitable building for sick children will be provided in the proposed extension of the Royal Hospital, and that a physician will be hereafter appointed to take more special charge of instruction in the important subject of infantile pathology.

The staff of the hospital at present consists of a principal physician, a physician extraordinary and two candidates, a head nurse, an hospital nurse, a night nurse, and servants. The pupils in the midwifery school may also be called on, when necessary, to assist.

In the course of the year 1855 the number of children admitted was 53, of which 9 remained at the end of the year. During the year 1856, 54 children were admitted, of whom 14 remained at the close of the year. In 1857, 39 children

were taken in, 8 of whom were still in the house at the commencement of the ensuing year. The number of children under treatment in the three years was, therefore, 146. Of these, 110 were dismissed cured; 10 were improved; 1 was sent out uncured; and 17 died. The mortality of the children was, therefore, to the beginning of 1858, 1 in 8·59, or 11·64 per cent. In Francis Joseph's Hospital for Children at Prague, the mortality in 1855, *after deducting the deaths caused by epidemics, tuberculosis, and rachitis*, was so much as 1 : 8·5. In Dr. Christ's Hospital for Children at Frankfort the mortality in 1855 was 1 : 3·3; in the Crown Princess Louisa's Hospital in Stockholm it was, in 1854, 1 : 5, and in 1856 it was 1 : 6; while in the large Foundling Hospital in the same city the deaths of children, from one to three years of age, were 1 in 2·24. From these statements, adds Professor Faye, it will be seen that the mortality in children's hospitals is very great.

The author appends details of some of the most interesting cases observed in the hospitals, accompanied by remarks on their pathology and treatment. He also gives the dietary of the hospital, and a copy of the diet table of the Hospital for Children in London.

2. The second work in our list is supplemental to Professor Faye's essay on Uterine Deviations, noticed in the twenty-third volume of our present series.

3. From Dr. Grähs' statistical report we learn that the second visitation of cholera, which reached Stockholm in 1853, carried off 2875 persons out of a population of 95,385. To this succeeded, at intervals of about seven months, two new outbreaks in 1854 and 1855, which may be considered as offshoots from the former invasion, and which destroyed respectively, in the capital alone, 560 and 767 individuals. The epidemic of 1855, which forms the subject of the Report, dated from the 31st July. There had been but little sickness in the months of January and February; this had increased in March, and was considerable in April and May, but had subsequently diminished so far that in June and July the sanitary condition of the capital was on the whole very good. In a meteorological point of view, there were no remarkable deviations, either before or during the epidemic, except that the fall of rain in August was unusually great, amounting to 3·697. The heat, which was greatest in July, did not exceed 86° F. The epidemic lasted until the 3rd of January, 1856, that is, for a space

of 157 days, or 22½ weeks, during which time 1356 persons in all suffered in the capital from developed cholera, of whom 655 were males and 701 females, and of whom 767 (364 males and 403 females) died. The per-centage mortality of the males attacked was, therefore, 55·5; of the females, 57·4; and of the whole number who sickened, 56·5. The daily average of sick was 8·6, and of the fatal cases 4·8. With respect to the entire population of the city the per-centage of sick was 1·4, while the deaths were 0·8 per cent. The author appends to his work a very beautiful diagram, exhibiting at one view the mortality from cholera in Stockholm from each of the three visitations of 1853, 1854, and 1855.

As to the origin of the disease, the author adds that, from inquiries made, including the searches of the police authorities, it did not appear that the first who sickened had been to any place affected with cholera, or in contact with persons from such a place, and that no facts could be deduced in favour of the importation of the disease from any other quarter. "Has it then," he concludes, "occurred spontaneously? is such a thing possible? I answer only, with an English author in discussing a similar subject,—'*Cholera, this strange and mysterious enemy, disregards all established laws of epidemics, and flies, with the speed of the locomotive or the ship, over land and ocean.*'"

4. "The Sanitary Question" is a review of some papers in the "Edinburgh Review," and in Chambers' "Papers for the People;" of a Report by the General Board of Health in London on the epidemic cholera of 1848 and 1849; and of an Address delivered by Professor A. Retzius before the Swedish Society of Physicians in October, 1849. None of these papers are recent, and they need scarcely detain us at present.

5 and 6. The fifth pamphlet in our list is on a subject which it would be rather roundabout to study through a Swedish work; nevertheless we must express our satisfaction at seeing the condition of the British people an object of interest to our Scandinavian friends. The sixth, being non-medical, does not call for further notice at present than the expression of our thanks to the author for its transmission.

Essay on the Pathology of the Blood and its Containing Vessels. By Thomas A. Wise, M. D., F. R. S. E., F. R. C. P. E., late Hon. East India Company's Medical Service. Edinburgh: Adam and Charles Black. 8vo, pp. 388.

The task of a reviewer, if undertaken in a proper spirit, is certainly one of no ordinary difficulty, as it requires not only a proper amount of judgment in its performance, but likewise a nice discrimination in its execution, in order to award a candid and impartial verdict on the efforts of an author who, perhaps, may have expended much time, labour, and anxiety, on a work, the character of which may form the subject of consideration. We have always considered it to be an invidious office to dash the cup of anticipated triumph from the lips of any individual, but more especially so whenever there may appear a deep and heartfelt desire on the part of a man to endeavour, to the utmost of the ability with which Providence may have endowed him, to add his contingent, however trifling it may be, to the advancement of that peculiar branch of science to which he may have specially devoted himself; but still there are circumstances which, on the other hand, must not be overlooked, and occasions will arise where the hand of a Mentor is sometimes of acknowledged benefit, in imposing a salutary check on that feverish restlessness which urges a man into the field of literature to write a book simply to gratify his own vanity, and to strut for a few short hours of his existence as an author, whose sentiments, be they good or bad, must receive the stamp of publication.

It has ever been our settled conviction that a book, like a man himself, should always stand or fall by its own intrinsic character, and that we have morally no right to condemn either the one or the other until we have taken the trouble of making ourselves fully aware of every point, redeeming or otherwise, that may lie beneath a surface not always prepossessing on a first and superficial examination. The most powerful mind cannot always divest itself of a prejudice when once fairly formed, and, struggle as it may against the influence of this unhappy passion, still its baneful effects will always appear to colour with its sombre shadows the picture that laboriously strains to be impartial, but labours in vain to produce the desired result. And hence arises the absolute necessity of at least endeavouring, by every means in our power, to enter upon a work of this nature with sentiments free and unbiassed, to frame our judgment, not upon principles exactly in unison with our own preconceived ideas, but rather in a spirit of that universal

charity which leads us to seek for a good motive rather than a bad, and a desire to please and instruct rather than the wish for individual display.

We have been induced to hazard these few preparatory remarks before directing the reader's attention to a book which at present lies before us, from the pen of Dr. Wise, for many years surgeon in the service of the Honorable East India Company; and we must be so far candid as to confess, that from the perusal of the first hundred pages or so, we were led to entertain a very unfavourable opinion of the character of the entire work,—our impression being founded on the fact that it was really nothing more than a mere recapitulation of theories long since known to the whole profession, and displaying no novelty that could fairly entitle it to take its place amongst the standard productions of the day. A glance at the preface, however, fortunately explained that this preliminary portion had been published upwards of a quarter of a century back in a Calcutta medical journal, and was now merely reprinted in a collective form, but without any pretensions to originality beyond that which it might have laid claim to at the period when it first made its appearance. It was this that induced us to regard with more critical attention the succeeding portions of the volume; and it is only simple justice, on our part, to acknowledge that we obtained not only much information from their perusal, but were, likewise, greatly interested in many of the details, emanating as they do from one who appears to have been a close observer of what fell beneath his notice, and who has described with a vivid exactness a series of lesions, at the present moment invested with no small amount of importance from the locality in which they have been witnessed.

It would seem that gangrene, originating from a variety of causes, is extremely prevalent in India, and the most trifling sore, if not properly attended to in the first instance, is liable to be influenced by the least irritation, which will rapidly convert it into that formidable affection, so dangerous to the unfortunate sufferer. Amongst the numerous examples of this lesion, as given by the author, we select the following, which he has very properly designated as rare in its nature:—

"CASE.—M. B.—— æt. 40, of stout make and sanguine temperament, had been in India for 12 years. In November, 1839, he was attacked by an inflammation of the left eye, probably from using it too much, and not taking sufficient exercise. He soon got well; but on the 1st of January, 1840, he was attacked with acute bronchitis, for which he was treated.

"On the 7th he had an attack of epistaxis; and to-day he first

noticed red patches upon his chest, which gradually extended to the trunk, face, and extremities.

"Jan. 10. Twelve leeches were applied to the chest under the clavicles, where the redness was most vivid. At this time there was considerable redness, and a general swelling of the face and body. This extended to his mouth, and his tongue was so swollen that he could only swallow with difficulty.

"15th. A day or two after this, an abundant secretion of a purulent fœtid matter took place from all parts of the skin. This was followed by an abundant desquamation over the chest, hands, arms, and face. The cough continued. During the night he was slightly delirious.

"16th. The face discharged purulent matter of a fœtid smell; the eyelids were infiltered, and the left eye was again inflamed. The cough very distressing.

"19th. Leeches under the clavicle. From this time, cream of tartar was given daily; and mustard foot-baths to cause a determination from the head were used.

"The suppuration has now extended over all parts of the body, particularly where the skin is bent, as in the axilla, &c.

20th. From the 20th to the 25th the patient is weaker from several slight attacks of fever, which he supposes are caused by the coldness of the weather; and he remained in bed until a flannel dress was prepared. The bowels have been kept open, and changes of temperature are avoided, fresh oil and Goulard's lotion were applied to the parts which are suppurating, in order to prevent too great a degree of weakness from the copious secretions.

"21st. Desquamation commenced in the inside of the mouth, which became so sensible, and the tongue so dry, as to prevent him eating solid food.

"30th The patient is very weak by the copious suppuration, which begins to diminish. He feels well, and is anxious for his warm dress in order to enable him to return to his business.

"Feb. 6th. To-day he felt a severe pain in the left great toe, which is cooler than natural. Heat was in consequence applied with dry friction and camphor-liniment; passed a very good night.

"7th. The patient felt very well. At mid-day he was placed in a warm-bath; a quarter of an hour after, the burning heat returned with great violence, and he was taken out of the bath. Heat to the pained part, and frictions with the tincture of cantharides. The pain diminished in the evening, but returned in the night. The great and the other toes were pale and cold, while the rest of the body was red and hot. A small blister, the size of a crown-piece, was placed, at the urgent request of the patient, upon the great toe, and he was ordered to remove it as soon as he felt the pain diminish.

"8th. On removing the blister 12 hours after its application, the part was found black and gangrenous, and the half of the foot very cold. From 6 o'clock in the evening to 7 A.M. four grains of opium and three grains of camphor were given; frictions with the oil of

turpentine upon the leg and foot, with the application of heat, were continued. Diet,—meat, soup, and wine and water for drink.

"The night was passed without sleep on account of the great irritation of the skin, so as to oblige the patient to scratch himself continually.

"9th. The eschar of the blister has increased in size, enveloping the other toes and part of the foot; but the cold did not extend beyond the ankle. The foot is swollen, and is of a violet colour. There is a sense of numbness in the part rather than pain. The pulse is feeble and frequent. The mouth is dry. Heaviness without any derangement of the head. Diet,—meat-soup, a mutton-chop, with wine and water for drink. Ass' milk during the day. Turpentine frictions continued; they are felt less than yesterday. Four grains of opium and camphor.

"10th. The tongue is better. Has neither had stools nor passed urine for 24 hours.

"Soup, prunes, wine and water, with whey and nitre. Poultices of linseed, mixed with camphor and bark, were applied to the foot, and repeated 6 times a day. In 24 hours he took four grains and a half of opium and camphor.

"To-day I first saw this unfortunate gentleman, and found the whole skin of the body dry, hot, very red, and desquamating. It was very itchy, so as to oblige him to be continually scratching. His mouth was parched with great thirst; he had no appetite; tongue brown in the middle, and clean along its edges, pulse small, hard, and 120. His head was unaffected. All the toes of the foot were insensible, and black; and gangrene had extended along the instep half way up to the ankle. Its edges were pale, and no line of separation appeared. I recommended his not being forced to eat, to diminish the quantity of opium, and give it in the form of Dover's powder; to give an aperient, to continue the poultices, &c., and to be guided by circumstances.

"22nd. I afterwards was requested to see Mr. B. in consultation with his surgeon. We found the patient in a much better state. He said he felt quite well. The colour of the surface of the body was nearly natural, although the desquamation and itchiness continued. The pulse small, soft, and 110; tongue clean, thirst diminished, appetite improved, and bowels regular. The toes were completely gangrenous, and sphacelus had extended to near the ankle, where the line of separation between the dead and living parts had commenced. The ulcerated surfaces were healthy, and some superficial gangrenous slough on the foot had separated, and the surfaces were peeling. Under these circumstances I considered the moment for performing the operation had arrived; and having given the patient a dose of castor oil during the night, the leg was next day removed under the knee.

"On dissection the muscles of the foot were found of a deep dark reddish colour. On cutting through the deep ulcers in the sole of the foot, a quantity of dark, thick, very fœtid pus, which communi-

cated with the metatarsal joints, was evacuated. This proved the necessity of the operation.

"The stump healed up very well, though a small exfoliation of the bone retarded somewhat the cure. His health continues very good."

The case as here detailed is certainly of a most extraordinary nature, and it is very difficult to determine which is the more worthy of admiration—the amount of physical energy displayed by the unhappy patient under such a complicated mass of disease, or the cool resolution evinced by the surgeon who, under such circumstances, had a sufficiency of moral courage to risk a capital operation at so momentous a crisis. The success with which it was attended ought to read us a lesson which should never be forgotten, and teach us the danger of attempting to measure the extent of the rallying powers of the human constitution by any specific formula.

There is one subject in this volume which has been most admirably handled, and the author has sketched a picture so vivid of the disease in question—elephantiasis—that a person could almost fancy it is immediately beneath his eye; and that what he has written has been the result of his own personal observation, aided by that of others, is clearly evident from the following statement:—

"Possessing opportunities of noticing such cases, I requested an intelligent native assistant to note down the symptoms in the following examples of the disease in its primary form, and I had an opportunity of judging of the accuracy of his remarks. I have only altered the language of these notes."

We can only express our regret that we cannot afford room to give those cases in full, but we are anxious to abridge as little as possible the author's own admirable description of the incubation, progress, and termination of this curious disease.

"An attack of elephantiasis is usually preceded by shivering, anxiety, a feeling of listlessness, lowness of spirits, thirst, deranged bowels, and want of appetite. This is followed by a sudden pain in the groin, extending along the anterior and the inside of the thigh, when the leg is the part affected. In other cases the pain is confined to the foot and leg, which are hot, swelled, and sensible. This local irritation is quickly succeeded by rigor, and pain in the head, back, and loins, which is followed by sickness, sometimes vomiting, and great languor, lassitude, and prostration of strength. The pulse becomes hard and frequent, the skin hot and dry, and the patient complains of a burning sensation over the body, with great pain in the leg and foot affected, and often in the head. This hot stage is succeeded by local and general perspirations, with a feeling

of relief to all the distressing symptoms. This febrile attack continues for two or three days, during which it usually increases for twelve hours, and after remaining a day or two in that state slowly diminishes. During the attack imperfect morning remissions and afternoon exacerbations may be observed, which vary in degree from a well-marked state of fever to one that is scarcely observable. In general, during the continuance of the attack, the patient lies in bed, complains of great languor and feverish uneasiness, is distressed by speaking and noise of all kinds, breathes with an effort, and complains of pain in the head and leg. The tongue is covered with a thick white or yellowish coating; he has no appetite, and is prevented taking food, as the natives suppose that it will increase the disease; and for a like reason he is very rarely allowed to gratify his thirst. During the paroxysm any movement is accompanied with pain in the part effected, which often prevents the patient walking for days after the fever has disappeared.

"When the groin and thigh are examined in the acute stage, a swelling may be discovered which extends to the knee-joint, or even to the foot, following in this course the venous branches, and indicated by the pain and sensibility of the part on pressure; the neighbouring cellular tissue of the thigh and leg is swelled, and over it a network of veins frequently appears, having in some places a hard, round cord-like feel, with a slight erysipelatous blush of inflammation along the course of the veins thus affected. The state of these vessels is best observed in the acute primary attacks of the disease. In one case I found, after a paroxysm, the trunk of the saphena major vein prominent on the bent knee-joint, with a hard cord-like feel, and a swelling upon the anterior part of the leg, from which many branches of the vein affected during the paroxysm had arisen. In other cases the local inflammation is confined to the foot and leg, which become swelled, hot, and pit on pressure being made upon them, while the lymphatic vessels and glands of the thigh and groin continue without any apparent change.

"'These prominent veins in the neighbourhood of the inflamed parts during the attack are found,' says Dr. Towne, 'much distended with varicose swellings, which are very apparent from the knee down to the extremity of the toes.' As the disease advances, the local inflammation diminishes, and the distended veins disappear in the increased swelling of the part.

"The degree and extent of this local inflammation vary in different cases, and depend on the constitution of the individual, the stage of the disease, and the severity of its exciting causes. The degree of the swelling varies likewise in different cases, and is first observed along the course of the inflamed veins, and the parts from which they arise, especially in most depending parts, where the cellular tissue is in largest quantities; and it varies in its nature according to the severity of the inflammation, and the frequency of the previous attacks. As the local inflammation diminishes, the

swelling enlarges, and generally pits on pressure being made upon it, but becomes harder and more or less incompressible, and generally of a smooth red colour. It has then an uniform figure, and the skin appears distended, especially when there is much lax cellular tissue, as on the dorsum of the foot and about the ankles. After several days' duration, the cuticle desquamates, and the person feels comparatively well.

"The first attack leaves generally no permanent swelling, but disappears when the paroxysm has passed. The person is again attacked at uncertain periods with the same local and constitutional symptoms, and after several paroxysms a swelling is left, which is augmented by each attack, and diminishes during the intervals. This diminution becomes less marked after the disease has continued a considerable time, as in this case the veins of the part become more extensively diseased, but from the swelling it is often impossible to detect their state; and even when we have an opportunity of dissecting parts which have become deformed by the slow depositions after each accession of the inflammation, it is difficult to determine what state the vessels are in during the paroxysm.

"Sometimes the distended skin bursts or ulcerates in a severe attack, and a discharge of a serous fluid takes place with great relief to the patient. This fluid, as its temperature diminishes, sometimes coagulates into a white mass. In other cases these acute local symptoms terminate in abscesses in the leg or foot, the discharge from which mitigates the symptoms.

"These attacks of fever and inflammation may occur frequently, or at considerable intervals. In general, however, after exposure to the exciting causes, of which cold and moisture are the principal, these attacks occur more frequently; the moon, too, may be observed to have a remarkable influence in producing the paroxysm. In many cases it takes place at the change of the moon, in others at the full, and in some, more especially at the commencement of the disease, at both change and full moon; and in the young and plethoric subject, even at shorter intervals.

"The disease is more rapid in its course in young and strong than in old and weak persons; and as the swelling of the leg increases, the regularity of the paroxysms and severity of the inflammatory symptoms diminish; from the 12th to the 20th year they no longer occur with their previous severity or regularity. In this last stage of the disease, the person seems in good health, the functions of the body retain their natural vigour, and the patient feels no other inconvenience but that of dragging about an enormous mass.

"In plethoric individuals the disease continues with little intermission in a state of excitement, and the deformed skin is exquisitely sensible. In both Mr. Chevalier's cases, the individuals could not walk for years on account of the size and irritable state of the limb. 'One of them was utterly unable to bear being lifted up in

the erect posture, and could only be gently raised from her seat with exquisite pain; mortification at length put a period to her misery."

"In the more chronic form of the disease, as seen in India, individuals may be seen performing in the usual manner all the duties of servitude until the approach of another paroxysm; but the feeling of weakness or very uneasy listlessness, deranged bowels, and want of appetite, which usher in the attack, generally continue after the disease has terminated, and the functions of the deformed part are impeded by the increased swelling. In old cases the local exacerbations recur without any perceptible disturbance of the system.

"*Consequences.*—When the part is examined after numerous paroxysms, it is found much enlarged, and has a hard, equable, shining, and desquamating surface, which pits sometimes on hard pressure being applied. The leg and upper part of the foot are the parts principally swelled, and very large fissures are found on the anterior part of the leg, from the movements of the ankle-joint and the strong fascia covering that part. In other patients, in particular when the disease is long present, the skin becomes swelled in large tumours, or folds, which in some cases hang over others of a smaller size. This appearance is explained by the vessels which are principally affected arising from these parts, and by the quantity of cellular tissue which is bounded by the unyielding nature of the fascia, or continual movements of neighbouring joints, which prevent the enlargement of those parts. In some cases I have found these tumours of the natural colour, and as large as a child's head; sometimes they are in clusters at the lower part of the leg. In other cases numerous tumours of different sizes are found on the upper part of the foot and lower anterior part of the leg, from a very minute to a large size, when they have often a pale colour, approaching to white, with varicose veins ramified along the surface of the larger tumours. These tubercles or tumours are distinguished from the tubercles of lepra tuberculosa from being in the one case round and pendulous, and generally connected by a neck to the leg, while the latter are flat, irregular, and large at their connecting base.

"The skin often continues of the natural colour and structure for years after the first attack, when it becomes of a darker colour, feels dry, with frequent desquamations of the cuticle, particularly after acute attacks. The structure of the cutaneous tissue is thickened, the cuticle having generally a chapped and scaly appearance; in the native the skin becomes almost insensible, and in some places it takes on the dark horny appearance of ichthyosis. These changes seem first to be owing to an extension and thickening of the cuticle, which leave it in a morbid state; the epidermis is very thick, and adheres intimately to the corion. Below the epidermis Mr. Chevalier found the papillæ of the skin excessively enlarged, elongated, and prominent at the surface of the dermis.

"Fissures between the large swelling in the foot and lower part of the leg often discharge a thin transparent-looking fluid, which

frequently becomes like-jelly on exposure to the air; in other cases this discharge takes place near the toes, from the abraded or ulcerated surfaces or heads of some of the tubercles, particularly during the exacerbations, which are relieved by the discharge. These ulcers are superficial, and sometimes of a large size, with a hard edge and indolent surface, and are cured with great difficulty.

"In some old cases, the appendages of the skin or toes become gangrenous and fall off; and in the more acute forms, which occur in Europeans, the disease often terminates in mortification of a part of the diseased member."

Although this disease is of such a formidable nature, Dr. Wise is emphatic in stating that persons affected with it often arrive at an advanced period of life, their only cause of suffering arising from the periodic attacks of fever which he has so graphically described. The favourite station of elephantiasis would appear to be Bengal, and its attacks are not confined solely to the Hindoo, but are extended to the European, especially after a protracted residence in the debilitating climate of this country. It would also appear that the female sex are particularly obnoxious to its ravages, and the face, neck, mammæ, upper extremities and labia majora, are equally disfigured by this loathsome disease. We would most earnestly impress on the reader a careful perusal of the entire of this article, as it is unquestionably one of the most able and instructive that has hitherto appeared on this curious subject.

Towards the latter end of the volume, in the article on phlebitis, we find the following case recorded, which is illustrative not only of the quick perceptive faculty of the author, but likewise shows how little value can be placed on post-mortem examinations as conducted in the present day, unless the individual who performs them can embrace as if intuitively, and on a single moment's reflection, all the various causes that may produce the fatal result, and, with the skilful hand of a master, corroborate his anticipations by actual demonstration.

"I found in the dissecting room of La Pitié, Paris, the body of a muscular man, who had had his leg amputated some time before he died. All the splanchnic cavities of the body had been opened without discovering any cause for the patient's death. The veins had not been exposed, and expecting to find them diseased, I proceeded to examine them. On opening the vena cava ascendens, I found its internal surface of a dark uniform red colour, containing several portions of consolidated blood. Eight inches from the termination of the vein in the stump two valves were situated, which appeared more opaque than natural. The internal membrane was irregular in its surface, and easily torn. Two other valves appeared to have been

removed by ulceration, and only irregular semicircular prominences were left. The internal membrane, from this point to its divided extremity, was thickened, irregular, and filled with pus. Its internal surface was of a light colour, and rough at different parts from the deposit of unadhering lymph, which, when removed, left the shining transparent appearance of the internal surface of the vessel. In such acute cases of phlebitis, the irritation of the diseased vein is conveyed along the tissue, and the purulent secretion from its surface passes into the circulation, inflaming the heart and large vessels, and one or more of the serous membranes, according to the predisposition of the individual. In such cases, on dissection, the effects of the inflammation may be traced to the heart and large vessels. On examining the diseased veins, portions of consolidated blood will be found not sufficient to form the boundary to prevent the pus from passing into the circulation; and even when the consolidated blood is more complete, the irritation may lead to the fatal termination."

In conclusion, we would beg to observe that the book before us forms one of that particular class, which we are bound to say are by far too numerous in the present day. Much that is really excellent and deserving of every commendation is found scattered here and there throughout its pages; but then it is so marred and neutralized by stale truths and the recapitulation of facts long since known and established, as utterly to destroy every feeling of interest which, under other circumstances, it was so well calculated to excite. Were the volume intended as a class-book we can well understand how absolutely imperative it becomes to note every circumstance, however trivial it may appear, in order to impress upon the minds of the rising generation by what slow and gradual steps the literature of medicine and surgery has been progressively exalted to its present standard of honourable pre-eminence, but we must protest most strongly against such a system being pursued in a work of a more general character such as the one before us. It is, in fact, nothing more or less than a gross literary imposition, where more consideration has been placed on the bulk than the material, like an apparently massive wall, faced with good brick and mortar, but lamentably hollow in the centre, or at best only filled up with a quantity of contemptible rubbish. Most sincerely do we regret that the ambition of Dr. Wise was not of a more circumscribed nature, as it might have prompted him to write a book of a much smaller caliber, and in doing so the many novel subjects of his present production, if judiciously arranged, fortified of course by brief and apposite quotations from writers of acknowledged merit,

would have formed an honest and reputable foundation on which to erect his claim to the character of a close observer and original thinker.

Precis Iconographique des Bandages, Pansemens, et Appareils. Par M. le Docteur Goffres. Paris: Mequignon Marvis. 1857. 18mo, pp. 595.

To analyze such a work as the one before us would be alike tiresome and useless. The greater part of its contents can only be properly mastered by a careful comparison of the text and the illustrations, and as it is impossible to transfer the latter to our pages, we must fain omit any lengthened reference to the former. Letter-press descriptions of the modes of applying bandages, even when minutely accurate, must fail in conveying to the mind any adequate notion of the processes. So that, were we simply to confine ourselves to this part of a reviewer's work, we should be able to say but little, beyond some well-merited praise of the able manner in which all connected with this admirable work have fulfilled their respective tasks. It is hard to say whether more credit is due to the author for the clearness of his descriptions, or to the artists who have drawn and engraved the illustrations. Some of these are perfect pictures, not only as giving at a glance the entire process of applying various complicated bandages or apparatus, but for the elegance of their finish and the accuracy of their drawing. Yet we must not forget that a reviewer has often a higher and more difficult task to perform than that of analysis, or even of meting out praise or blame. Reflections will often occur to him in connexion as much with the subject of a book as with the mode in which the subject may be treated in the works before him; and there are many reasons why, at the present time, *petty surgery* should claim some attention at our hands. First, is the sad reflection that it is a subject almost wholly neglected by the mass of students; and next comes a host of reasons why this is so, and the more difficult task of considering the appropriate remedy. Certainly, if we take the average of our hospital classes, we shall be obliged to confess that large numbers of our students pass their whole term of studentship without properly learning the various details of petty surgery; nay more, that were they put to the test at their final examination, a large proportion—might we not say the majority?—would egregiously fail in even the simplest appliances of dressings and

bandages. Is it not a fact that surgeons, men with diplomas in their pockets, at some of the earlier examinations for public medical appointments, failed to go through the steps of the simple act of venesection? Yet these men had ample periods of study, and superabundant courses of lectures. If we compare the average daily attendance at our best attended hospitals with the number of pupils on the roll, what proportion of the nominal class shall we find following the medical officers in their daily rounds? Probably one-third would be a very high average attendance. And how many out of this third are *bonâ fide* students; how many superadd to walking the hospital a careful noting of the cases; how many act as dressers; how many assist the surgeon in the application of apparatus; how many, if called on, could themselves put up a fracture, and properly dress a simple wound? Hospital surgeons will know what to answer. Probably some dozen or half dozen in a hundred.

Where, then, are the pupils? Are they systematically idle, and do they absent themselves from the hospitals merely from unwillingness to rise early and work? Doubtless this is the case with some, but it will not account for the mass of absentees. The bulk of the classes at the hospital hour is engaged either in preparation for or attendance at the morning "grind." To follow the inquiry still farther,—why is the "grind" preferred to the hospital? Here, too, the answer is easy,—because the "grind" is the best preparation for the examination, and the passing of the examination is the sole legal test of capacity for practice. What a monstrous contradiction have we in this! The test for capability of practising is an examination which entices, if it do not compel, the student to desert the practical field of the hospital for another place of instruction, which must be inferior as a substitute, because wholly theoretical. However valuable catechetical instruction in the closet may be as an assistant, it can never rightly replace bedside instruction. Its place is to elicit knowledge, not to convey it; and we deeply deplore the ever increasing, though natural tendency, there is in all who resort to it, whether as teachers or pupils, to make it the means of imparting knowledge. Much of this error has arisen from the imperfect preliminary education of youths who come to the profession. The present legitimate and recognised system of teaching is by lecture. Now, however admirable as a means of instruction lecturing may be, when the lectures are addressed to well-educated men, there is a vast difference in the results attained when the lecturer has for his audience many whose minds are imperfectly trained by previous studies for the reception of new truths. How often has the lecturer found that

his lectures were plain and intelligible only to a few, and that, after labouring to make a point clear to the meanest capacity, some student, after the lecture is over, has come forward with a query that showed how little of the train of reasoning, or exposition of fact, had been understood by him! To receive new facts into the mind, the mind must be opened up by previous culture, or the seed will lie on the surface and be scattered to the winds. Lecturing cannot penetrate the previously unbroken soil, and hence we have a system of grinding to scratch the surface, and throw up a temporary promise of crop which will satisfy the examiner. We need not wear out our reader's patience by riding the metaphor to death. No further reference is needed to the stunted and withered produce of this shallow cultivation.

It is to this imperfect preliminary education, and to the simultaneous overgrowth of the lecturing system, that the evil is to be traced, and the evil is to be met by improving the one, and reducing the amount of the other, rather than by any blind attack upon the system which has taken its place. The students readily settle the balance of over-lecturing by the simple practice of non-attendance, and this evil thus cures itself. The London College of Surgeons, seeing this, has reduced the number of lectures to be required of English students seeking its diploma. As far as this is the abolition of a sham, it has our hearty approval. We wish it were as easy to remedy the other evil.

To return to our book. We have here a work which should be in the hands of every hospital surgeon. Every variety of bandage is in it enumerated and figured; and though every surgeon in any practice may be able to apply bandages with sufficient neatness and dexterity, still he will find the advantage of practising at times with his pupils some of the less common varieties. They are occasionally necessary, and familiarity with them will assist in giving facility to his hand; besides, the book will recall many things to his mind which as a teacher he should remember, though as a practitioner he may seldom have occasion to use them.

The book is very ample on the subject of bandages and dressings. This is natural in a French work. The fashion in dressing in Paris is, generally, to overload the wound with dressings. Charpie, lint, napkins, bandages, are piled and heaped around the injured part, with the intention of excluding the air and preventing purulent absorption. All our countrymen who have followed the practice of French surgeons must have remarked this. The natural result is inflammatory

action and increased suppuration in the part. The pus is confined, and angioleucitis arises; dressings are still applied, and sometimes with redoubled diligence, until erysipelas of the worst type and purulent absorption take place, the result of the very means taken to avoid them. Another evil of French dressing is the *nimia diligentia.* We have seen extensive suppurating surfaces, such as are left after the sloughs have separated in burns, dressed daily with stimulating dressings. The needless exposure to air and the over-stimulation produce very intractable sores; and the worse the sore becomes, the more is the interference of the dresser redoubled. In these things we do not recommend French surgery to the imitation of our readers, but in the admirable minuteness with which the details of petty surgery are taught we are unable to compare with them. The student cannot advance a step without a thorough familiarity with this branch of his studies, and the highest clinical surgeon is not above taking notice of the student who acquits himself well or ill. It is true, that from the size of their hospitals and the number of their patients, the surgeons do not themselves instruct the juniors in these matters; but the staff of clinical assistants, of all grades, is so numerous, that every pupil has plenty of means of learning at his disposal, and the various examinations he has to undergo render it necessary he should avail himself of them.

The portion of the book that treats of apparatus is less ample than the rest; the selections, however, are good, and are characterized, in the main, by an absence of complex machinery. We have most of the valuable modern improvements, though not always under right names: as, for example, when L'Estrange's adaptation of the canal-boat catch to the reduction of dislocations, is introduced to us as Charriére's instrument *de détente.* We have the swinging apparatus for fractures, irrigating machines, some nice, light-looking splints of M. Mayor, made of wire-work, and the two great modern improvements for fractures and dislocations fully illustrated, namely, Baron Seutins' starched apparatus, and Colombat's mode of reducing dislocations by manipulation. We miss the simple and convenient galvanic apparatus of American origin, and, as is natural, the authorities referred to are generally French. The names, however, of Cooper, White, Pott, Monro, and M'Intyre, occur not unfrequently, and show the author to be fairly acquainted with the literature of his subject.

We have in conclusion, only to express again our pleasure at meeting so elegant a little work, and to congratulate all concerned in its publication upon so excellent a result of their combined labours.

A Manual of Obstetrics, Theoretical and Practical. By W. Tyler Smith, M. D., M. R. C. P., Physician-Accoucheur and Lecturer on Midwifery at St. Mary's Hospital. Illustrated with 185 Engravings. London: Churchill. 1858. Fcap. 8vo, pp. 628.

Men's minds, it has been said, are as variously constituted as their faces. Be this as it may, it is, at all events, true that different minds require to have information presented to them after different fashions. To one, the statistical table, with all its details, is necessary; to another, it is fatiguing and repulsive. To some, a compilation giving the opinions of good authorities, in their own words, is most suggestive of thought; to others, a work formed on such a plan is little more than an unconnected tale. Under these circumstances, the multiplication of books, especially of class-books, is not a great evil,—on the contrary, may be a great benefit; yet let not the formation of such be undertaken lightly, for it involves great responsibility. Who can limit this responsibility, or say where it will end? Let him, then, who undertakes to write a manual for students do it calmly, carefully, and seriously, as becomes one whose teachings may influence the lives, happiness, and character of widely extending circles. We have been led into these reflections by the perusal of the preface to this book, in which Dr. Smith begs that the consideration of the little time he has had for preparation, and the labour involved in writing in the midst of the busy avocations of practice, will be allowed to plead as some excuse for any shortcomings which may be evident to the critical reader. In other works such an excuse might be held valid, but so sacred do we hold the mission of the teacher that we could not admit it for an instant in a manual intended for students. We are happy to say, however, that there was little necessity for making such a plea on the present occasion; for, though there are faults both of omission and commission throughout the book, it is one that will, we think, be found to be a valuable addition to Mr. Churchill's series of Manuals, of which it forms a part.

Dr. Smith writes in a peculiarly attractive style; his powers of description are especially good; and, in conveying his information, he does it in his own words, instead of compiling quotations from other writers, whereby his influence over the mind of the student will, we think, be greatly increased. To the physiological and theoretical portions of the book great care and attention have been given, and, as might be expected from the author's previous writings, these parts of the work are exceedingly good. In the more practical details there are some

parts, we think, capable of considerable improvement; but, on the whole, the book is well fitted for leading students to become good and scientific practitioners of the obstetric art.

We have noted some few points for special reference: thus at page 62 we have a suggestion as to the nature of menstruation, which we do not remember ever having met before, and which seems to accord more with established facts than any other. Dr. Smith believes that at each menstrual period the mucous membrane of the uterus is, in great part or entirely, broken up, and its *debris* discharged; and that a new membrane is formed, as a preparation for the reception of a fecundated ovum. This idea is supported by many facts, which are well stated, and seems to us to be incapable of any other explanation. At page 71 we have the formation of double monsters considered, and the theory of St. Hilaire, as to their being the result of the union of two originally distinct ova, is adopted. This, we apprehend, is one of the results of our author's haste, as the researches of Vrölik, Allen Thompson, &c., have shown these monsters to be the result of a process occurring in a single ovum. Dr. Smith's belief in the diffusion of the nervous material throughout the cord, and his idea as to the cause of the twisting of the vessels of the cord, are also points requiring further consideration. At page 173 we have some good reasons adduced for the belief in the possibility of superfœtation; and at page 182 there is a good account of that curious phenomenon, "missed labour," which, it is stated, has not hitherto been mentioned in systematic treatises on midwifery. The next point we would notice is of more practical importance,—it is as to the active dilating powers of the os uteri. In a previous book, if we remember rightly, Dr. Smith adopted fully Marshall Hall's idea as to the active dilating powers of the sphincters; now he seems to have modified his views, but his language on this point is obscure. We do not believe in this power of active dilatation at all, and are apprehensive that even Dr. Smith's guarded recognition of it may lead to errors in practice by making students careless as to preserving the membranes in the early stages of labour. The chapter on the mechanism of labour is very good; several of the figures illustrating it are original, and well calculated to convey a correct idea of the process. However, we fear that many a student will be puzzled by a transposition of the words "large" and "small" that has occurred, to the great detriment of the meaning, at page 278. We have also found the meaning obscured by another misprint at page 456.

We now arrive at the chapter on the management of natural

labour; and here there are several points that we would recommend a more careful consideration of in the next editions of the work. We find no allusion to what in Dublin we are in the habit of teaching, as what Dr. Collins calls a "paramount duty," viz., the following down the uterus with the hand during the expulsion of the child, so as to insure permanent contraction. We would also desire more explicit directions as to the application of the binder. We are ourselves in the habit of applying it immediately after the birth of the child, and tightening it again after the expulsion of the placenta. Latterly some of our Dublin teachers recommend that the uterus should be held with the hand until the placenta is expelled, and then that the binder should be applied as the more certain method of insuring a permanent contraction. Dr. Smith seems to think it unnecessary to use any means for maintaining contraction during this stage of labour. We object very decidedly to the directions given as to the removal of the placenta in *ten minutes* after the birth of the child. In the Dublin lying-in hospitals *two hours* are allowed to elapse before interfering, if there be no hemorrhage. Even if it be lying in the vagina, we hold that there will be less risk of hemorrhage, and that the after-pains will be less severe if it is not interfered with till it excites contractions for its expulsion.

We would suggest that in future editions there should be an entire chapter written on the management of the placenta; as it is, we have only incidental notices of it. Retention from inertia is considered in the chapter on post-partum hemorrhage; that from irregular contraction, in the chapter on "Inversion of the Uterus," &c.; and the form arising from morbid adhesion is nowhere alluded to. To add to the difficulties of the student, there is no reference to retained placenta in the index. Marshal Hall's "ready method" of resuscitating children might also receive a greater share of commendation than it has in this edition.

The chapter on the management of the puerperal state is, on the whole, good. The remarks on the propriety of allowing good diet as soon as the secretions are fairly re-established, we fully concur in; and also the warnings as to the evil of the too early assuming the erect posture, and returning to the ordinary habits. We hold that eight or ten days is not too much to retain the horizontal position. Indeed, we are in the habit, where it can be done, of recommending fourteen; and after that, of requiring, with Dr. Smith, the patient to rest on the sofa a great part of each day during the puerperal month. The following passage in this chapter we must except from our com-

mendations. Deficiency of the lochia from *retention* we have never seen; and the practice recommended of frictions, and washing out the uterus, we believe to be decidedly bad :—

"It is of importance that the lochial discharge should be free. In the event of deficiency from retention in the uterus or vagina, friction of the abdomen should be practised, with a view to excite contractions of the uterus, and the expulsion of any collections in its cavity. Warm water, infusion of camomile flowers, or a weak solution of chloride of lime, should be injected into the vagina two or three times daily; and in cases where actual mischief is apprehended, the cavity of the uterus itself may be washed out."

The chapter on convulsions is one of the best, as to the causes, pathology, and treatment of the epileptic form of this sad complication, that we have ever read; but even here we have indications of haste in its preparation, in the absence of any account of the symptoms and diagnosis of the attack, or of the hysterical or apoplectic forms of this affection; nor have we any account of the amauroses and partial paralyses often met with in cases of this description.

We trust Dr. Smith's observations will recall practitioners from the too exclusive attention that is at present being paid to uremia as a cause of puerperal convulsions. The influence of uremic poisoning, when it exists, we do not mean to deny; but it is remarkable that there is so little evidence to be had of the presence of urea or ammonia in the blood in these cases. Dr. Simpson and Dr. Christison have failed to detect urea beyond a trace, and we have ourselves made careful searches both for it and ammonia, in several cases without detecting their presence. There is a mode of treatment from which we have seen decided benefit, viz., opiate enemata, that Dr. Smith does not allude to. It appears to us to act by lessening the conducting powers of the nerves of the uterus, and thus cutting off the chief source of excitation from the spinal cord, already in a state of too highly excited polarity.

Among other points peculiar to Dr. Smith in this book we may notice his belief that rupture of the uterus is as likely to occur in first pregnancies as in any other; and we must also draw attention to the preference he expresses for forceps having a second or pelvic curve.

Perhaps the most serious omission in the book is the absence of all mention of accidental hemorrhage. We have a good account of post-partum and unavoidable hemorrhage; but this, which is of not less importance than either, is not described at all.

In thus drawing attention to what we consider defects in this Manual, we have no desire that our remarks should be taken as indicating our general estimate of its worth ; on the contrary, it is because of its defects being so few that they are easily noticed, and because of our desire to see them removed from future editions, that we have dwelt on them.

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1. *On Medicine and Medical Education: Three Lectures, with Notes and an Appendix.* By W. T. Gairdner, M. D., &c. Edinburgh: Sutherland and Knox. 1858. Fcap. 8vo, pp. 130.

2. *Four Letters to Sir James Clark, Bart., M.D., F.R.S., on Administrative Reform in relation to Medical Schools and the Examining Boards.* By A. Harvey, M.D., &c. London: Churchill. 1858. 8vo, pp. 80.

3. *L'Enseignement Clinique en Allemagne, particulièrement à Vienne: Projet de Rèforme pour l'Enseignement Clinique en France.* Par le Docteur Gallavardin. Paris: Baillière et Fils. 8vo, pp. 78, 1858.

1. The small volume recently published by Dr. Gairdner consists of three Lectures delivered at various intervals in Edinburgh, and considerably enlarged under careful revision in order to meet the exigencies of publication and accord with the progressive spirit of the times; therefore, although their general tendency remains the same in all, still they are modified by a wise discernment in such a manner as to suit the exact auditory for whose instruction they were intended. We are consequently prepared not only to tolerate, but also to admire, the difference of style adopted by the author when he addresses a class of students, and that marking his address on a kindred subject as read to the members of a scientific institute associated for the purpose of mutual inquiry and philosophic discussion. With the student he is admonitory, enforcing the grave and onerous duties involved in the daily life of a devoted student of our profession, the toils to be undertaken, the labours to be undergone, and the end to be achieved in the career of pupilage:—emulative, in displaying the spirit-moving hopes, the great rewards, the fame and honour that await the zealous labourer in the field of that ancient faith which for near two thousand years has ever been increasing in intensity, but still immutable in its principles, although hourly becoming more perfect in all its details;—religious, as teaching the des-

pondency to be removed by faith in a great cause, the passions to be subdued, the human love to be engendered at this most impressible period of life, as well as the social duties which will surround them in virtue of their position in after life, when they will be not only the friend and adviser, but frequently the unwilling judge of those faults and frailties which the imperfections of man's nature render inevitable.

With the man of general scientific acquirements he pursues a more discursive mode of composition as more suitable to a general auditory than the didactic efforts of scholastic instruction, and exhibits clearly, but yet in general terms, the serious interest which society should take in the education and conduct of the rising members of our profession. He proves how intimately interwoven the physician must be with every moving phase of the social aggregate, how essential to their happiness, how inwrought in every feature of their destiny from life to death. Further, he eschews that system of frigid dogmatism which marked the profession of the past, and demonstrates the incompatibility of its chilling influence with the living progress of our art; and, seizing the dogmatic opinions of the quack, he wields it as a trusty weapon to annihilate their pretensions to infallibility. The third discourse completes what the preceding have sketched out, and deals a heavy but well-deserved castigation to the professors of homœopathy, positively, by exhibiting the dishonour and dishonesty of Hahnemann in the sale of his secret borax salt; and relatively, by examining systematically the claims of medicine as an art as well as a science. These he points out with a clearness and precision so perfect that the essay becomes invested with all the character of an elaborate defence of legitimate medicine. Dr. Gairdner has our unreserved commendation for the spirit of his remarks, and we esteem the publication of these Lectures as an important adjuvant in raising the character of teaching, and exhibiting the spirit which animates those Magi who direct the profession of the future, and who seek to exalt the students of our art by displaying to them the value in its social aspect, and the grandeur in its higher aspiration, of that science which they have made the object of their toil, the goal of their hopes, and the inspiration of their life's labour.

2. The Letters of Dr. Harvey inscribed to Sir James Clark, on the subject of medical administrative reform, possess no small amount of interest at this unsettled juncture of professional legislation. In composition they are didactic, critical, and utilitarian; each sentence being accurately weighed, and care-

fully wrought into a most forcible essay on medical education, which, if not absolutely original, is still sufficiently suggestive to afford hopes that the publication may not be without its good results. Having devoted sufficient attention to the proofs of the great importance of our art, he then deals with the imperfections of our present modes of teaching, taking especial exception to the lecture system. He recommends that the character of lectures should be utterly changed,—that, instead of being elementary, they should be critical and exegetical, leaving the lower forms of instruction to the pages of the class-book. This view so accurately corresponds with opinions we have heretofore enunciated, that it is a subject of congratulation to our feelings that we professed this same plan a few years since in our Journal, and hope yet to see it accomplished.

The selection of special text-books for examination, and the sessional repetition of those exercises, constitutes another novel feature in the author's work, and is one of such importance as to claim the attention of all those engaged in medical instruction. We cannot say that we are convinced by the argument which he brings forward, nor do we think that Irish students will ever become obedient instruments in any system of routine, however perfect may be its details; and as we are convinced that any government, to be successful, must be adapted to the spirit and tendency of those over whom it is sought to exercise a special control, we would accord the greatest possible amount of intellectual liberty to the Irish student: other legislation may, no doubt, be more suitable for the systematic Scotch and persevering English pupil.

3. Dr. Gallavardin, having occupied a summer session in observing the system of teaching (clinical) adopted in Germany, has published in a small pamphlet the results of his labours in the school of Vienna. He does so in the hope that a similar system may be adopted in France; but until our social usages become assimilated to those of Germany, we cannot conceive the utility of carrying out this system to its full extent; still, however, the perusal of the author's views will amply repay all those who take an interest in clinical teaching.

The Principles of Treatment of Chronic Phthisis Pulmonalis. By EDWARD SMITH, M. D., &c. London: Longmans. 1858. 8vo, pp. 54.

THE chief aim of the author of the present essay appears to have been to direct attention to that period of the disease in question, and to that condition of the lungs, by which the deposition of tubercle is preceded. Favoured as he has been with a wide and extensive field for inquiry in reference to phthisis, the author has employed his powers of observation and reflection very assiduously, and has carefully noted a great number and variety of circumstances as leading points for inquiry, and in the arrangement of the work before us each point is taken up separately with a view of ascertaining what it has to do as a cause, an attendant upon, or an effect of, this disease. As a guide to the formation of a correct estimate, the following rules are premised:—

"I. A condition to be essential must be universal within the same limits.

"II. But to assume that an essential condition shall be present in every instance of a disease, is to assume that our knowledge of the disease is so perfect as to enable us to limit it with absolute certainty. This is very unlikely in a disease so general as phthisis, and one which acts so extensively upon the system; and by way of analogy we may call to mind many diseases—as cancer and fever—which, having been thought one at a certain period, have been proved to be many at a later and better informed era.

"III. Hence it is probable that in practice an essential condition will not be found in every case of the so-called disease; but if it be found in the vast majority of cases, the probabilities are rather that the remaining cases are not cases of the disease than that the condition is not an essential one; or that these cases have a power as yet unknown, of preventing the exhibition of the influence of this essential condition. The doctrine of probabilities must here have weight, and in our profession it should have a greater weight than the demonstrative habits of the present day are prepared to allow.

"IV. An essential condition having been found, it may have various degrees of influence in different cases.

"V. All conditions which are not essential should be excluded when determining the nature of an object; and in the treatment of diseases they must be regarded as subordinate to the removal of the essential condition."

That a considerable limitation is to be observed in estimating many of the commonly received predisposing causes, depending upon age, sex, season, condition of body, &c., appears from the following conclusions; these being the results at which

the author has arrived upon carefully reviewing the several predisposing circumstances.

"I. That not one of them singly is essential in the production of phthisis.

"II. That condition of life, country, and education, are problems too complex, and composed of elements too varying, to permit of an accurate estimate being made of their influence in the production of phthisis.

"III. That we know too little of the influence of stature, season, temperament, and condition of body, to estimate their influence.

"IV. That age appears to have influence, and one which our present knowledge enables us to define in a general manner; but it is probable that, as with sex, the influence is rather that of the attendant conditions, and that the value of age in the inquiry is to enable us to place limits within which these causes are most powerful.

"V. That in order to arrive at accurate conclusions, we must analyse the causes until we have separated all their elements. This is done by considering the influence of food, clothing, exercise, abuse, anxiety, occupation, &c.; although these circumstances singly never act alone, and cannot therefore be estimated with absolute truthfulness, we may arrive at the general expression, that phthisis may be due to some or all of the conditions which induce an excess or a defect in the natural powers or actions of the body.

"VI. That although we may not be able to define the extent of the influence of any cause so as to give the proportion in which many of them may relatively be instrumental in producing phthisis, or in which they may be powerful in producing phthisis more than other diseases, we may reasonably be permitted to ascribe to them a certain power in its production, but we must be content with that and not make comparisons, *inter se*, whilst the influence of each is understood."

The disputed point, as to whether the deposition of tubercle shall be considered the first step in the disease, is considered at some length. Supposing the existence of such deposition to be assumed as affording a definite period from which to name the disease, and to calculate its subsequent duration, the author argues that if this were the starting point, it would not give the required information, inasmuch as in many cases this condition of the lungs has not been suspected until necroscopic examination has revealed it to have existed; while in some cases of disease, in which the physician is led to examine the lungs most carefully, the existence or non-existence of tubercle in its earliest condition has failed to be settled beyond doubt or dispute. He maintains that tubercular deposit is not the first step in chronic phthisis. The grounds of this belief are thus briefly stated:—

"I. That whatever tubercle may be, it must be due to anterior causes, and there must have been a period prior to the deposition of tubercle, in which those causes acted.

"II. It is universally admitted that a predisposition to phthisis exists and is demonstrable; and so long and widely has this been known, that non-professional people are enabled to indicate its existence. Then, as in those persons having this predisposition there is a greater probability that they will have the disease than that they will not, or than that others will have it, there must be a true relation between that state and the disease. Now, assuming that tubercle is the starting point of the disease, as they have not then the disease they have not tubercle; but as they are the persons in whom the disease—that is, tubercle—is most likely to occur, they are in the stage which precedes tubercle, that is, in the stage in which the causes are acting which must precede and which produce tubercle. I know well that the difficulty lies in proving a connexion between these two states, which is either a necessary antecedence to, or a cause of, the latter; and it is to overcome this that I especially direct attention; but it will suffice if I show that that early condition is a necessary antecedent to tubercle, without being called upon to prove that it is a cause of tubercle, or that tubercle is its necessary consequent. I consider that this connexion is proved from its own evidences absolutely, and from those contrasted with the evidence which tubercle in its very early condition affords. Its own evidences are shorter breathing, less breath motion, feeble and shorter inspiratory sounds and particularly the vesicular sounds, and this may be more or less general over the whole of both lungs. Expiration quick, forcible, and perfect. Deep inspiration may be effected, but it is not effected by the patient unless at least his attention be directed to the defect, and more commonly not until he has given attention by repeated efforts. This may be readily proved by the inspiration. The quantity of tidal air is often diminished in ordinary breathing. The general indications of body will be those of atonicity, and possibly the rate of pulsation and respiration will be increased, and the complexion and condition of system evince a state of mal-nutrition. There will probably be flattening of the chest, depending upon original conformation or upon the progress of the disease. The same remark will also apply to dulness on percussion. Cough may or may not exist, as also some hemoptysis. The essence of the whole is less respiratory action; and as this varies in degree, extent, and duration, so will the other signs vary.

"The evidences of the disease when tubercle is deposited in its very early period, are the same, but with the addition of those of the existence of obstruction at certain defined places. Hitherto there was lessened action, but no localised obstruction, but the deposit of a matter more or less solid offers obstruction to the entrance and exit of the air in the precise spot in which it is placed, and then by extension as the quantity increases. This is evinced by wavy or jerking respiration and prolonged expiration. In addition, the new

substance will displace a quantity of air, and then, by its own heavier specific gravity, cause the resonance on percussion to be less clear.

"Thus the essential difference in the two stages is, that in the first we meet with simply lessened action and its consequences, whilst in the second there is added obstruction and solidification; and these signs are sufficiently diagnostic, except perhaps at that short period when the two meet, or the first passes into the second stage."

After enumerating the many causes which may possibly operate in producing a shortened respiration, the author strikes out such of them as are not known to have a general action, and reduces the category to three, viz., lessened muscular effort; lessened capability of expansion in the air-cells; and lessened call for air. The second of these is not induced until after tubercular deposition has continued for some time; the last can only be inferred from the diminished quantity inspired, and yet not inducing dyspnœa; while the remaining, that is, lessened muscular effort, whether arising from diminution of cerebro-spinal power, or an atonic state of the tissue, is considered as the most probable cause of general application. In the large number of observations which the author has made concerning the phenomena accompanying the respiratory movements, their strength, duration, difficulty, or other circumstances, it would appear that his attention has not been much directed to an investigation of the real value of a sign of phthisis, which of late years has been much written and talked about, namely, a marked difference in the comparative duration of inspiration and expiration. The circumstance, however, has not escaped his notice altogether; and in the following extract it will be seen that he has made some observations bearing upon this question, which are of practical importance. In speaking of the movements of the chest he says:—

"But besides the localised deficiency in movement, there is a general deficiency in the earlier stage, and a further irregularity which is worthy of notice. In the earlier stage, it is of common occurrence to find a want of correspondence between the apparent effort and duration of inspiration and the extent and duration of the inspiratory movements; so that the patient, when directed to deeply inspire, appears to be and believes himself to be inspiring when, in fact, the movement of the chest and further introduction of air have both ceased. This is remarkable, and of daily observation, and with it we usually find a short and snatching inspiration. The power of expiration is perfect—short, quick, and forcible—and often seems to have obtained the muscular effort which the patient has lost in reference to inspiration; but at the same time there is in some persons a disposition to retain a larger quantity of air that is natural under the

circumstances, and thus to lessen the depth of the succeeding inspiration. These irregularities are so marked and frequent amongst my out-patients at the hospital, that the thought is impressed upon the mind that men and women need to be taught how to breathe. In such cases, if we ask for a deep breath we obtain a short and feeble inspiratory effort, and then a sudden forcible and complete expiratory one, and if the act is repeated frequently the length of the expiratory act is lessened, but its rapidity and force are maintained. The aim of the patient seems to be to empty and not to fill the lungs; and it is only by making this apparent to him, and enforcing it by an illustration in my own person, that he comprehends the error, and after that it is often impossible to induce him to take the deep inspiration which he ought to take. The importance of this error is very great, since it tends directly to prevent due expansion of the lungs, and to induce a train of consecutive evils.

"Now, to what is this state to be attributed? It is not to obstruction within the chest by any deposited substance, since it occurs when there is no deposit, as also when the deposit is inconsiderable, and, it may be, is restricted to one lung alone. When it occurs with extensive deposit it is less remarkable, and I believe it to be less frequent under these conditions. The two most patent causes are deficient muscular action and closure of the trachea. The former may simply result from the general atonic state of system with which it is commonly associated; but it is, I am convinced, due often to a condition of some of the muscles, which orthopædic surgeons have of late frequently regarded as paralysis, but I think without sufficient reason. The special muscular power exerted in inspiration is proportionately less than the power of other muscles in the body. It is not that the walls of the chest are less mobile; for, on the contrary, the tonicity of the ligaments and the cartilages is, perhaps, lessened, and, therefore, their resistance is decreased. Hence they would move if the motive power were adequate. This is also capable of proof from the fact that by more attention and effort on the part of the patient, the inspiratory movement does increase. The involuntary closure of the trachea, such as occurs on coughing or when we use much effort, as in lifting burdens, and as we are able to induce voluntarily at any moment, is, I am convinced, of very frequent occurrence. The patient, in obeying directions to take in a deep breath, snatches a breath and the effort stops suddenly, and at the same time there is a motion about the larynx which attracts attention. It almost always occurs that he breathes through the nose, and when directed to breathe through the mouth, and with an open throat, and to feel the air passing down the throat, he is enabled to increase considerably the volume of air which he inhales. This is most readily obvious when using my spirometer to determine the total vital capacity, and then it is not infrequent to obtain an addition of thirty cubic inches to the quantity previously breathed. This obstruction is, therefore, an involuntary act, but one which volition can overcome; but although it may be overcome by practice, it seems

to be an almost insuperable difficulty at the first. It is one of the greatest obstacles to free inspiration with which I have to contend; but yet one which, whilst it has led to much injury to the system, offers much more hope and encouragement in the treatment of the disease than would be the case if the existing degree of inaction were entirely due to internal deposit. It is a bad habit resulting from deficient muscular power, and is not infrequent in states of chronic debility from other diseases."

The various conditions of the throat met with in phthisis are well described, the principal of these being three in number. The first, and most common, is merely a state of great pallor, with absorption of fat, atrophy of the anterior, and undue prominence of the posterior arch of the palate. The second form is characterized by enlarged mucous follicles upon the uvula and the posterior wall of the pharynx; and the third exhibits a state of desquamation, with effusion of lymph upon the pharynx, and general vascular congestion. These several forms of diseased appearances are well shown in the coloured plate which accompanies the description.

We are inclined to think the author has treated the subject of indigestion too lightly, dismissing it with the following few observations; in fact we have long since learned by experience to regard the early appearance of dyspepsia as a matter of most serious import, and one which too often appears to give the first impetus to the development of a phthisical degeneracy of the system. He says:—

"*Indigestion.*—Indigestion is often present in the long course of so chronic a disease, but it is not a necessary cause or consequence. It is, moreover, usually amenable to treatment; but yet it oftentimes requires attention. It is commonly associated with a sense of weight or tenderness over the region of the liver on both sides, and indeed this latter occurrence attracts more attention than the former. The condition of the liver is one of lessened action, perhaps, but certainly one of congestion, and it is due doubtless to the interference of the pulmonic circulation which necessarily occurs in the disease. In like manner there is commonly some disposition to deficient action in the bowels, due partly to the same cause, as evinced by the occurrence of hemorrhoids, and subsequently of purulent collections about the rectum. The state of the stomach, liver, and bowels, requires inquiry and relief, since it is so constantly associated with conditions of the throat, and is apt to react in other ways upon the general system; but the continuance of a sufficiently good appetite is the best proof that this state is not constant, and does not seriously interfere with the constitution of the body. It is, however, so frequently associated with other evils in a long course of disease, that the physician should have it continually in his view."

The following remarks on the rate of pulsation and respiration are too concise to admit of condensation: they will, however, be read with interest:—

"The rate of pulsation and respiration in phthisis is most variable. In the inquiry before referred to, I found that that of the former varied from 55 to 166, and of the latter from 11 to 43, per minute; and that the total average of 3,000 observations in all stages combined, was 95·3 pulsations, and 23 respirations, per minute. In one-third of the cases there was a total average pulsation under 90 per minute, and in only one-third did it exceed 100 per minute on the total average; whilst in one case, with phthisis of both lungs, and also with Bright's disease, the total average was 76·1 pulsation per minute. The highest monthly average recorded was 128·4 per minute. The highest average rate of respiration was 31, and the lowest 16 per minute (Diagram iv. and the 'British and Foreign Med.-Chirurg. Review,' April, 1856).

"The ratio of the two functions was also equally variable. In individual instances it was as low as 1 to 9. The ratio of the total averages varied from as 1 to 3·3 to as 1 to 6·2, and even in the same case the ratio varied with the day and night from as 1 to 2·8 to as 1 to 5·1. In a woman, the ratio at 1 and 3 A.M. was found so high on the average as 1 to 1·4 (Diagram ii. and the 'Transac. of the Roy. Medical Society,' 1856).

"Hence, increased rapidity of both functions is commonly associated with phthisis, but, except at the last periods, it is not invariably present. In the advanced cases there was found not only increased frequency, but greater variation in the rate, and also greater excitability of system. There was a *general* relationship between frequency of respiration and extent of disease, frequency of pulsation, short stature, lessened vital capacity, and excitable temperament. Posture was powerful in modifying the rate in phthisis; so that there was an extreme excess in one day of 29 pulsations in the sitting over the lying posture, 32 pulsations in the standing over the sitting, and 44 pulsations in the standing over the lying posture. The total extremes recorded were—lying, 55 and 138; sitting, 62 and 150; and standing, 75 and 166; whilst the total average was a difference of 10 pulsations between each of the postures in the morning, and 7 in the evening, or a total of 20 pulsations between lying and standing in the morning, and 14 at 4 P.M. (Diagram iv.). Increase in the rate of pulsation, from posture, is not invariable, but in one-fifth of the whole observations there was an increase in the sitting over the lying, and in 237 of 502 observations, there was an increase in the standing over the sitting posture. The total average showed an increase of 1 per minute in the sitting, and 1·4 per minute in the standing posture.

"The influence of day and night is very great, but during each of these periods separately, there was much uniformity (Diagrams ii. and iii.). The periods of change were the morning from 5 to 10

o'clock, and in the evening from 9 P. M. to 1 A. M.; and the total average of the increase was 27 pulsations in the former, and the decrease 19 pulsations in the latter. In isolated instances the increase of the day over the night was upwards of 40 pulsations per minute. The low pulsation of the night was due to, first, posture of body which has been given above; second, darkness, about 10 pulsations; and, third, sleep, from 5 to 10 pulsations on the average. The higher pulsation of the day was associated with, first, waking from sleep, 5 to 10 pulsations; second, sunlight, 10 pulsations; third, food, viz., breakfast, 10 pulsations; dinner, 11 pulsations; tea, 7 pulsations; and supper, $2\frac{1}{2}$ pulsations: fourth, exercise and mental actions and emotions. The influence upon the rate of respiration was in some respects different from that in the rate of pulsation. The total rate was higher in the night than in the day. This was associated with sleep, and so great was the influence, that with the first hour of sleep there was often an increase of 10 or 12 pulsations per minute, and with the first hour of waking in the morning there was a total average diminution of 13 respirations per minute. The lowest rate of the 24 hours was observed at the time of waking in the morning, and before food had been taken. Sunlight appears to have no influence over the rate of respiration; but temperature, in the long period of one month, greatly increased the rate of pulsation, and lessened that of respiration. With this increased temperature was also commonly associated increased dryness of the air, and hence both causes might have operated to produce the opposite effects just mentioned. Food increases the rate of respiration to the extent of $2\frac{1}{4}$ respirations after breakfast, 3 after dinner, and $1\frac{1}{2}$ after tea; but the effect of supper was too frequently null to be estimated by averages.

"Hence, in estimating the rate of pulsation and respiration in phthisis, we must have regard to the following circumstances: age and sex, stature, temperament, extent and stage of the disease, posture of body, exercise, wakefulness, sleep, sunlight, darkness, temperature, humidity, and food."

At the end of the book the reader will find three very ingenious and comprehensive diagrams in illustration of this subject, the first two of which have already appeared in the twenty-ninth volume of the Medico-Chirurgical Transactions. The first (Diagram II.) exhibits to the eye at one view the rates of pulsation and respiration in the quiet lying posture, in three male patients affected with phthisis, at every hour during six days and nights; each case being represented by a wavy or curved line, which in the upper part of the diagram represents the pulse, in the lower the respiration. The following circumstances are thus made evident, viz.:—1. The high rate of pulsation during the day as compared with the night, the great variations due to food, and the morning ascent and the

evening descent. 2. The higher rate of respiration in the night than during the day, with the sudden increase of the rate at the first hour of sleep, which is particularly evident in one of the cases. 3. Sleep increases the rate of respiration, and lessens that of pulsation. In a few instances this may be seen in the diagram in reference to day sleep.

The second of these plates (Diagram III.) shows the *hourly* variations in the rate of pulsation and respiration in each of six phthisical patients, and in all combined, deduced from previous inquiry. There is a feature in both these diagrams, which, by the way, we do not quite comprehend, namely, that the dark or shaded space representing the hours of darkness, extends invariably *further* on the *morning* side of the line of midnight than on the evening side of the same line. Thus, for example, on the 12th June (Diagram II.) the darkness is represented as extending from 10 P. M. till 4 A. M., which is at variance with all our almanacs.

We turn now to the *second part* of the treatise, containing the general principles of treatment. Looking upon diminished respiration as the essential feature of the disease under consideration, the author earnestly calls attention to the first or pre-tubercular stage, "since in that, and in no other, we have every physiological reason for believing that our efforts may be effectually and rationally made."

The essential treatment, therefore, consists in augmenting the respiration, which may be effected and promoted by many aids. The remarks which the author makes upon such practical measures as are suggested by the above view of the nature of the disease—for example, *voluntary*, deep inspirations at certain convenient intervals, the various kinds of bodily exercise in the open air, the application of cold externally, &c.—are highly judicious, and deserve to be read attentively. Upon these we shall not now dwell, but will bring our notice of a thoroughly practical and useful little volume to a close, by quoting the paragraph with which the essay concludes:—

"In bringing this paper to a close, I feel it to be scarcely necessary to call attention to the removal of whatever conditions may have given rise, or have tended to give rise, to the disease: such, for example, as deficient food or clothing, anxiety, excessive or defective bodily exertion, abuse, occupation, residence, and impure air; since it is evident that to remove an effect implies, at least, the removal of the cause. But I would venture very earnestly to ask the attention of my professional brethren to two circumstances: First, to appreciate fully the existence of a pre-tubercular stage, and its importance as the only period for successful treatment; feeling assured

that this is a first and a necessary step to a better acquaintance with the subject by the public in general and to the application for medical aid under these favourable circumstances. It would also give a definite view to the treatment adopted with feeble youths of both sexes, with a view to improve their general health, and be a measure of the importance and progress of the case; and, second, to believe, and to induce the public to believe, that, fatal and prevalent as the disease is, it is one *largely capable of prevention.* May the period yet arrive when, whilst retaining the many advantages of our day, we shall in no small degree exchange our enervating brain-working and money-seeking habits for some of the breath-exciting practices and rustic simplicity of times not yet out of memory."

The Ophthalmoscope; its Mode of Application explained, and its Value shown, in the Exploration of internal Diseases affecting the Eye. By Jabez Hogg. London: Churchill. 1858. 8vo, pp. 107.

Mr. Hogg is already favourably known as a writer by his very useful monograph on the Microscope. In the volume before us he enters into the history of the invention of the ophthalmoscope, and claims for Mr. Cumming, an English surgeon, the honour of having "pointed out the existence of a reflection from the back of the human eye, and distinctly recognised the significance of the discovery."

The contents of the book have been already given to the profession in the pages of The Lancet, and the author's apology for their reappearance in the present form is, that he believes, "the instrument is destined to open out a new era in ophthalmic medicine." It is not our intention to enter into a minute analysis of the work, but to extract cases and passages from it, and make a few observations thereon. We fully agree with Mr. Hogg, that correct diagnosis is the secret of success in the treatment of diseases of the eye; but we cannot accord to the ophthalmoscope the amount of value attached to it by the author and by many other London surgeons, while we are convinced of this,—that the indiscriminate use of it in every case of that ambiguous disease termed "incipient amaurosis" is fraught with danger to the patient, and may be attended with loss of reputation to the surgeon. We are also sure that nearly all the curable affections of the internal structures of the eye may be diagnosed with far greater safety to the patient, with the eye aided by a compound glass of about one inch focus[a].

[a] Those made by Hawes, London, we prefer.

That several of Mr. Hogg's recorded cases were quite capable of diagnosis by the symptoms presented, without the aid of the ophthalmoscope, and were treated entirely from a knowledge of these symptoms, and not from the diseased appearances discovered by this instrument, we shall now endeavour to prove. A case of "nyctalopia—day blindness, with floating masses in vitreous," is detailed.

A sailor, aged 46, while serving in the Crimea, was exposed to very great hardships; the combined effects of bad food, cold winds, hail, and working for three weeks in the glare of the snow, are followed by epistaxis, which lasted for five hours; four days afterwards his eyes became inflamed and ran water, which continued for three weeks, "during which time he found he could only see about nightfall." For this he is bled, cupped, and blistered, which, he states, weakened him very much; afterwards he was removed to the hospital at Constantinople, where a tonic plan of treatment was prescribed, and he was sent home to England. He then applied to Mr. Hogg, who examined his eyes with the ophthalmoscope, and we have the following report:—"Lenses perfectly clear, retinoid vessels large, numerous, and distinctly seen; over papilla optica a bluish patch, and a general grayish appearance of the *optic nerve!* the fundus has a curious mottled appearance, rather dark in colour, like pigmental masses seen through a red gauze. One spot, larger and darker, fixed near the inner side of the optic nerve. Many floating specks of a dark gray colour. External vessels of conjunctiva rather larger and more numerous than in normal state. Continuously looking on the snow, he was told, brought on the first attack of inflammation." We are at a loss to know why the last two sentences are given as part of the ophthalmoscopic examination.

The writer adds:—"My patient was pale and weak, and I considered the administration of tonics would give him the best chance of recovery. Mist. Ferri Co. was prescribed three times a day;" after the long-continued use of which, we are told, "he said he could just make out persons passing before him by daylight, and had great hopes of regaining sufficient sight to go about alone." May we ask, of what use in this case was the ophthalmoscopic examination?—did it throw any light upon the affection under which he laboured? Were not the indications for treatment plain and evident? and to the continual action of a cessation of hardships, change of air, improved general health, and the persistence in the tonic treatment (previously prescribed), must the slight change for the better

in his vision be solely attributed, and not to any supposed knowledge gained by the use of the ophthalmoscope.

The next case is still more striking; it is entitled, "Hemiopia, with masses fixed and floating." The principal symptoms are thus given:—"Now troubled very much with small bright stars floating in both eyes, and has side vision only in left eye; first and second molar teeth in upper jaw much decayed and often troublesome (!), with headach." "Mydriasis partial" is given under the head of "examined by the ophthalmoscope," which certainly might be seen without its aid.

Here is a case of partial amaurosis, the history of which is very imperfectly given. The writer says:—"Six years since the right eye became impaired (?), and subsequently the left eye was affected in the *same* way" (how ?). We think, from the fact of the patient being an engineer and working a great deal by gas-light, and the symptoms above detailed, there was sufficient evidence that the cause of the amaurosis was retinitis, which should have deterred a surgeon from the uncalled-for use of the ophthalmoscope in this case. Our space will not permit us to comment on more than two other cases,—one given on the authority of Dr. Anagnostakis, entitled, "Amblyopia, with floating bodies in vitreous," which seems to us to be nothing more or less than a case of "accidentally discovered amaurosis;" an affection to which Mr. Wilde drew the attention of the profession some years ago. In this case the defect of vision was only discovered by the patient "when, by chance on closing his left eye, he perceived that he was deprived of sight in his right, and from that time he saw cobwebs before his eye." The other case is thus described:—"The patient was saved a needless operation, which had been recommended for the restoration of her sight. Mary F—— came to London for the purpose of submitting to the operation for a supposed cataract." Does Mr. Hogg mean us to believe that either he or any other of the London oculists requires the aid of this vaunted instrument to diagnose the existence of a cataract, more especially one about to be submitted to an operation?

We confess that it is very satisfactory to be able to diagnose the presence of hydatids in the vitreous humor, as was done in the case related by Dr. A. Von Graeffe, in which he endeavoured to fish out a cysticercus through an incision in the sclerotic, and finally succeeded "after several attempts," and having left the greater portion of the cyst behind. The result is thus detailed:—"Chronic choroiditis is apprehended." Surely, "the last state of that man was worse than the first." We feel con-

fident that no English surgeon will imitate the learned surgeon's piscatory operation.

A great deal of the book is taken up with the subject of "glaucoma." Copious extracts from the recent papers by Graeffe, Rosas, Bowman, Hulke, and others, upon the pathology of this disease, are given; and the author concludes an able discussion on the subject by the following sensible remarks in reference to Dr. Graeffe's operation:—"From the few cases which have fallen under my own observation, I must say, that I am not so sanguine of the ultimate value of this operation; nor do I think, before a year or two shall have passed over, that the success of the operative procedure will be established; I fear, in these cases the disease will return, and the disorganization proceed to destruction of vision." We go even further than this: we deny the use of excising three-fourths of the iris in this disease, and in this belief we are strengthened by the opinion of many able surgeons, both on this and the other side of the channel: time will prove this opinion to be correct.

The remainder of the book is taken up with numerous cases of amaurosis, and the ophthalmoscopic appearances detailed. We regret, however, that they do not seem to afford much additional information either on the diagnosis or treatment of this obscure affection.

Many of the cases are illustrated by well-executed lithographs of the morbid appearances of the retina.

In conclusion, although we differ from Mr. Hogg in many of his opinions, yet he deserves much credit for the amount of ability and research he has shown in the compilation of his book, which will, undoubtedly, repay a perusal by those who take an interest in ophthalmic medicine and surgery.

The Phenomena of Spinal Irritation, and other functional Diseases of the Nervous System explained; and a rational Plan of Treatment deduced. By THOMAS INMAN, M. D., Lecturer on the Principles and Practice of Medicine at the Liverpool Royal Infirmary School of Medicine; Physician to the Northern Hospital, &c. &c. London: Churchill. 1858. 8vo, pp. 201.

ACCORDING to the author, this volume really is "a treatise on muscular affections, and their bearings upon nervous disorders." These muscular affections are those which in a healthy individual are included under the terms cramp, spasm, stiffness, soreness or aching: in the invalid they are generally called pains.

The locality of these affections varies; they may attack the trunk or extremities—the former, Dr. Inman thinks, more frequently than the latter; and the tendinous parts more frequently than the fleshy. That these pains in certain localities are not unfrequently mistaken for evidences of organic disease, most of us know by experience; and it is, therefore, of consequence to point out the diagnostic marks by which they may be distinguished. According to the author, these muscular pains are almost always described as hot or burning; they are absent in the morning on rising, but go on increasing until bed-time; the pain is aggravated by bringing the muscle of the locality where the pain is felt into action; at first the pain is relieved by the pressure of the hand, but afterwards the parts become tender; the pain can be traced to unusual exertion in a strong person, or to a weak muscle having to do the work of a strong one: the pain is relieved by relaxation or artificial support: the pulse is always unaffected: the patient marks out involuntarily the muscle affected; and lastly, the pain of cramp comes on suddenly.

As the author has fully shown by well selected cases, a great variety of voluntary muscles are liable to this affection, and this chapter, and the next on the causes which predispose to muscular affections, will amply repay perusal. A very interesting inquiry is—"whether the involuntary muscles, and especially the heart, are liable to these cramps and pains from over-exertion." Dr. Inman concludes that the heart is not exempt from such affections; and that, when there is organic disease, they may tell with fatal effect. He believes—

"1. That, so long as the constitution is sound, and the muscular system in good condition, disease of the heart may be compatible with tolerable health. 2. That when the heart is diseased, and the person debilitated, death may be sudden, or otherwise, according to the work the heart has to do: when the heart is much enfeebled, the task of driving the blood to the head in an erect posture may be too much for its powers. 3. That the proper treatment is rest and quiet, as far as possible, the removal of obstructions, and the administration of such tonics as are available. In a great number of instances I have found rest and adequate nutrition alone suffice for (relative) cure."

There can be no doubt that many cases of sudden death are due to spasmodic affections of the heart, whether there be organic disease of the valves or not.

Now, what relation have these muscular affections to the so-called "spinal irritation," to which they are so commonly attributed? After a careful examination of the phenomena of spi-

nal irritation, as laid down by the best writers, Dr. Inman concludes—

"That the vast majority of the symptoms considered the result of spinal irritation, arise from over-exertion of one or more portions of the muscular system in debilitated subjects. That spinal tenderness has a similar origin. That the other symptoms, commonly considered as *resulting* from spinal tenderness, are *concomitants only*, and referable to a common cause."

Further, he considers that the weaker an individual is, the greater is the tendency to fibrous pain, and that debility increases equally the irritability of the muscular and nervous systems; and that hysteria consists essentially in increased irritability of the nervous and muscular systems, or both, arising from debility. The essential distinction between these hysterical and muscular affections is, that a large amount of bodily rest is necessary for the cure of the latter, while it is not so requisite for the former.

Having thus briefly noticed the character of the pain, its localities, and its relation with spinal irritation and hysteria, we shall proceed to give the author's indications of treatment:—

"1. For immediate relief the muscles must have rest or some artificial support, such as a bandage, elastic or otherwise, strapping, and the like.

"2. For a permanent cure, the whole system must be strengthened, and, where it agrees, there is no medicine which fulfils this indication like cod-liver oil, with or without tincture of iron, in full doses.

"3. When the cramps are severe, morphia internally and externally is of the greatest benefit. Forcible extension of the affected muscles gives almost immediate relief, if the cramp is recent.

"4. Galvanism is sometimes of service in restoring 'tone;' friction does little good; shampooing relieves, but rarely cures: strychnine is too slow in its operation to be trusted to.

"5. Exercise is of no use unless combined with fresh air, generous diet, and such medicines as tend to improve the digestive powers; for though exercise improves the muscles in the country, yet it commonly debilitates in a town like Liverpool.

"6. Local depletion, blisters, or sinapisms, very rarely, if ever, give relief: if they do it is only temporary, and the next attack is more severe; the exception is when the spasmodic condition is permanent."

There are many more dangerous diseases than these muscular affections, few that are more common, and, we might add, more troublesome; and if the man who should discover a cure for a 'common cold' is to be considered a great public benefactor, so in a lesser sense may he who shall effectually control and remove these muscular pains and cramps.

We think that Dr. Inman deserves the gratitude of the profession for the trouble he has taken, and we shall be much surprised if he do not obtain something more than thanks in a town like Liverpool. The book is very nicely got up, and the different points have been elaborated in a way to which our condensed resumé does no adequate justice. Moreover every step in this investigation is illustrated by cases in point, of great interest, and very well related.

Epilepsy, and other Convulsive Affections: their Pathology and Treatment. By Charles B. Radcliffe, M. D., Physician to the Westminster Hospital, &c. Second Edition, revised and enlarged. London: Churchill. 1858. Post 8vo, pp. 383.

This is a most remarkable book—one with a lofty ambition too, no less than to overturn all our hitherto received ideas on the physiology of muscular motion, and to erect a new theory, whereon to found a pathology of the class of convulsive diseases. The work consists of two parts, essentially distinct, but illustrating one another: the first is an inquiry into the physiology of muscular motion; the second is on the pathology and treatment of the diseases named in the title. It is left to the option of any one who may so choose to read the practical portion first; and then turn back and see how far the conclusions to which he is conducted by arguments of a purely pathological character—arguments which are complete in themselves—are borne out by the physiology of muscular motion. We shall follow the order in which the subject is discussed by the author, for we believe, with him, that "a sound physiology must go before a sound pathology." We must observe here, that in treating of epilepsy and other convulsive affections, the author does not propose to himself to enter into every part of the subject; on the contrary, he says he passes by several topics of considerable interest in themselves, but only of secondary importance in the argument, because he does not wish to divert attention from the object he has in view, which is to point out the necessity for a fundamental change in the pathology and treatment of the disorders under consideration, and a change which is in accordance with that which would seem to be demanded in the physiology of muscular motion.

The great object of the book is to prove that "muscle contracts, not because it is stimulated to contract by nervous influence, or electricity, or any other so-called stimulus of con-

traction, but because something has been withdrawn from the muscle which previously prevented the free action of common molecular contraction." Professor Engel of Zurich, Matteucci of Pisa, and Stannius of Rostock, are claimed by the author as having advocated a similar view, either before or since he first wrote upon the subject. This theory, implying, as it does, that the muscles have a constant tendency to undergo contraction in consequence of the operation of certain common physical molecular forces, and are only prevented from contraction by the operation of certain other forces (electrical or nervous), on the withdrawal of whose influence the molecular force manifests itself, will be at once seen to be directly at variance with the recognised opinion, which is stated in a footnote to be, "that muscle is endowed with a vital property of contractility, and that muscular contraction is brought about when this property is called into action by certain agents, such as electricity or nervous influence. It is supposed, indeed, that this vital property of contractility is roused or excited, or *stimulated*, into a state of action when the muscle contracts, and hence the agents which thus rouse, or excite, or stimulate, are called stimuli." The application of this doctrine to the pathology and treatment of the class of diseases under consideration is, that as muscular motion is the result of the withdrawal of certain influences, and that as these diseases are characterized by excessive and irregular movements, the indication of treatment is for stimulants and tonics, whereby to increase the powers which counteract and prevent muscular contractions and movements. The reasoning by which this argument is supported is very ingenious, but fails to convince us; however, we would recommend our readers to judge for themselves. This we feel bound to say, that the perusal of the book has afforded us much pleasure.

In treating of the physiology of muscular motion, Dr. Radcliffe endeavours to establish the three following propositions:—

"1st. That muscular contraction is *not* produced by the stimulation of any property of contractility belonging to muscle."

"2nd. That muscular *elongation* (the term elongation is used in preference to the term relaxation, for reasons which will appear in the sequel) is produced by the simple physical action of certain agents, electricity and others, and that muscular contraction is the simple physical consequence of the cessation of this action."

"3rd. That the special muscular movements which are concerned in the carrying on the circulation—the rhythm of the heart, and the movements of the vessels that are independent of the heart—are susceptible of a physical explanation, when they are interpreted on this view of muscular action."

These propositions are considered in detail. Under the first we have the action of the various stimuli to contraction, as ordinarily stated, inquired into, viz., electricity, nervous influence, the blood, mechanical agents, light, heat or cold, and chemical agents; and the conclusion arrived at is, that these agents all cause relaxation, or, we should say, *elongation*, of muscles rather than contraction, as ordinarily supposed. To illustrate the operation of electricity, reference is made to the researches of Galvani, Volta, Humboldt, Matteucci, and Dr. Du Bois Reymond. These experimentalists, more especially the last two, have, as is well known, proved that muscles when in a state of rest have an electric current passing through them, not in any specific direction, but in some from the origin towards the insertion, and in others in the opposite direction. The current, moreover, is not fixed in its course, inasmuch as turning the muscle makes it set in a contrary direction. It appears, too, from the experiments of Dr. Du Bois Raymond, confirmed by those of the author, that this muscular current is weakened while the muscle is in a state of contraction, and that it is most active when the "irritability" of the muscle is most perfect; and that it fails *pari passu* with this "irritability," it being found to have died out altogether when the muscle has passed into the state of rigor mortis. This current our author believes to keep the muscle in a state of *elongation* by counteracting the tendency to molecular contraction, but on this we must let him speak for himself:—

"On turning from these considerations to those which concern the action of the ordinary galvanic current upon muscle, it is to be expected that the existence of the muscular current is not to be ignored. And further, it is to be expected that certain reactions between the two currents will arise out of the particular course of the muscular current. . . . . Now, if such be the course of the muscular current, it is evident, first of all, that there is no way of passing the galvanic current through a muscular fibre, in which this current will not cross the course of the muscular current. . . . . And if the two currents cross in this manner, then must they clash; and (to an equivalent degree) neutralize each other. In a word, it is not enough to regard the muscle as a simple conductor, through which the galvanic current has to pass and take possession, but it is necessary to regard it as the seat of a current which must be over-

come before the galvanic current can pass and gain possession. Nor is it not enough to say that the muscular current returns when the galvanic current is suspended. The muscular current does return at this time—of this there can be no doubt—but there is also another current which springs into existence at the same time, and this is the ordinary reverse current which arises out of the secondary polarity of some part of the circuit. Just then, as the muscle could not be looked on as a simple conductor at the moment when the primary galvanic current began to pass, so now it cannot be looked upon as a simple conductor at the moment when the muscular current returns to the muscle—for, before the muscular current can regain possession of the muscle, it must contend with and overcome the reverse current above mentioned. It is evident, indeed, that there will be a clashing and equivalent neutralization between the muscular current and the reverse galvanic current at the moment when the circuit is opened, which is in every respect similar to that clashing and neutralization that took place between the muscular and primary galvanic current at the moment when the circuit is closed; and hence a moment in which electrical action is neutralized—*a moment of inaction*, as it may be called—may be supposed to precede both the establishment of the galvanic current and the return of the muscular current.

"What, then, it now remains to ask, are the phenomena which attend on the passage of the galvanic current through the muscle, and how are they to be accounted for? The principal fact is, that a muscle contracts when the circuit is closed, and when the circuit is opened, but not during the time that the current is passing through it. . . . . In this experiment (one of Matteucci's) it was also found that the contraction on opening the circuit was less marked than on closing the circuit; that both contractions became progressively less and less marked until they ceased altogether; and that one or both of the contractions might be revived for a short time after their extinction by increasing the strength of the current.

"Now, in seeking for the explanation of these phenomena it is difficult, if not impossible, to find any reason for supposing that the contractions are due to any direct action of the current, natural or artificial. For, what is the case? The case is, that the muscle does not contract so long as the galvanic current continues to pass through it. The case is, that the muscle does not contract so long as it is left to the undisturbed possession of the muscular current. But, on the other hand, there is no difficulty in connecting the contractions with that clashing and neutralization of the muscular and artificial current, direct or reverse, of which mention has been made, as attending upon the commencement and cessation of the passage of the artificial current through the muscle. For if contraction is absent when the artificial or natural current is manifestly present, and if contraction is present when the artificial or natural current is manifestly absent, then there appears to be only one course open,

and that is to connect the contraction with the absence of the current."

The fact that the contractions become less marked as an experiment on a muscle proceeds, and that the contraction on opening the circuit is less marked than that on closing it, the author explains as arising in consequence of the diminution of the muscular current; for, to weaken this current is to diminish those neutralizing reactions between the two currents which, upon his view, are directly measured by the degree of the contraction. The reproduction of the contractions after they had once ceased, by increasing the strength of the artificial current, he attributes to this acting more deeply on the muscle and reaching fibres, unaffected by the weaker current. The hardness of muscle, in its contracted state, cannot, he says, be adduced as an objection to this view, because it has been shown by Professor E. Weber this depends on the straining of the muscle on its attachments, and when it is separated from these, it is, he says, actually softer than in its uncontracted state.

We cannot but think that the author acted wisely in placing this illustration of his theory in the foremost rank, for it is well calculated to create a good impression; and by offering a specious explanation of facts not hitherto explained, it inclines the reader to give a favourable reception to what is to follow. However, we would remind our readers of the assertion made by Hugh Miller (Testimony of the Rocks), that when a plain "common sense-like" explanation is offered of physical phenomena, it is to be received with caution, as being most likely to prove erroneous. Without, however, going so far in the present instance, we would remark that certain of the phenomena now alluded to admit of a different explanation ftom that offered by this theory, and that as the theory does not accord with many other facts, its explanation of the phenomena hitherto unexplained must be rejected; and we must remain in our ignorance yet a little longer. The electric current circulating in muscles at rest, we regard as the result of the chemical changes occurring in the process of the waste and repair of the muscular tissue; chemical affinity set free in the disintegration of the tissue is "correlated" into electricity, to be reabsorbed probably in the process of repair. Muscular contraction leads to and necessitates disintegration; but during the act of contraction this process and the consequent repair are not taking place: and therefore we believe it is that the muscular current is at this time weakened. Of the other facts under discussion, the oc-

currence of contraction in muscles at the making or breaking of the galvanic current only, and its absence during the continuance of it, we have no explanation to offer; but, for the reason above stated, that it does not accord with other established facts, we cannot receive Dr. Radcliffe's theory.

We have next to consider the effect of "nervous influence," Dr. Radcliffe asserting that muscular contraction is not produced by the stimulation of nervous influence. This is first investigated from an electrical point of view:—

"'Nervous influence' is a convenient term which includes more agencies than one. It includes certain agencies which are thought to be vital, and it includes other agencies which come within the scope of physical inquiry. It is not necessary, however, to determine how much is vital and how much is physical, for if one thing is more probable than another, it is that there is one common force underlying all agents, vital and physical, and that the differences of agency are owing, not to the difference of force, but simply to the difference of circumstances in which one and the same force is manifested. Now of the several agencies included in the term nervous influence, electricity is the one which is most easily investigated, and hence we will begin to interpret the mode in which muscle is affected by nervous influence from an electrical point of view."

Here we must protest against this confounding of nervous influence and electricity. That they are analogous,—nay, that they are different manifestations of the same force, may be quite true, and we believe it is; but the circumstances under which they are manifested are so different that it has always been a fertile source of error to apply the laws deduced from the operations of the one to the elucidation of the other.

The experiments of Du Bois Raymond have demonstrated that a current analogous to that met with in muscles, and obeying the same laws, exists in nerves; and that, like the muscular current, it is enfeebled during muscular contraction, and dies out with the irritability of the muscles, but differs from the muscular current in being more constant in its direction,—in the undisturbed condition of the parts, passing almost constantly in a direction from the toes towards the head. This fixity of the direction of the nerve current seems to us to indicate that it is derived from the electricity generated in the muscles by the peculiar changes going on in them; but the author seems to regard it as one of the special provisions for preventing the manifestation of the molecular force of attraction in the muscles. The effect of setting up a galvanic current in a whole nerve, or even in a short length of a nerve, is to cause a current to pass in an opposite direction to this nerve-

current, or, if the galvanic current be very weak, to at least weaken the nerve-current. Certain reactions then take place between the natural current and the artificial, and, as in the case of the muscles, a similar clashing and neutralization occur, producing periods of inaction, during which muscular contraction is effected in consequence of the molecular forces being unopposed. It having been shown that the effect of making and breaking the circuit resembles that found in muscles, the author proceeds :—

"Looking at muscular action, then, in relation to the electrical changes of the nerves concerned in this action, it would appear that muscular elongation is coincident with the *action* of natural or artificial electricity on the nerve, and that muscular contraction is connected in some way with the diminution or annihilation of this action; and no reason has yet arisen which can support the idea that any vital property of nerve has been called into active exercise during the time of contraction by the stimulus of electricity."

We have it next asserted that there is little reason to believe that muscular contraction is produced by any stimulation derived from the nervous centres, and certain facts are adduced as evidence of this. Here, however, we believe that the author fails utterly in proving his case. The experiments alluded to prove admirably that muscular contractility is not derived from the nervous centres, and that it may be stimulated into action by direct applications, but do not prove that there is no active agency exercised by the nerve centres, as is required by the assertion. He proceeds then to forestall an objection :—

"But it may be asked, is not a fatal objection to this view to be drawn from the mode in which the will acts in producing muscular contraction? Is it not certain that the will acts in this case by stimulating the muscle to contract? It is difficult, no doubt, to think differently. It is more than difficult to wean the mind from so old an idea. But, on the other hand, it must not be forgotten that the will may have *acted* in bringing about muscular contraction, not by imparting anything to the muscles, but by withholding something from the muscles, and this being the case, we may well refuse to allow a mere opinion respecting the action of the will, however sanctioned by time that opinion may be, to rank as an objection to a view of the action of 'nervous influence' in muscular motion, which view appears to arise necessarily out of the general history of 'nervous influence' as concerned in muscular motion."

Now in reply to this, we would ask, what is the nature of fatigue? Can we suppose it to be produced by the cessation of

action, or by the withholding of "something" which has been in constant action, preventing the physical forces of molecular attraction from manifesting themselves in the muscles? Is it not rather the result of the generation of power? According to Dr. Radcliffe's theory, a man should be most tired when he is most at rest—it is during rest that the vital powers are at work resisting the molecular attractions; therefore, in future he who is tired must work that his vital powers may recruit themselves, and it must be a mistake to seek relief from fatigue in rest or sleep. Then again the waste of the tissues,—when does it occur? Is it during the quiescence of the muscles, when the vital agencies are most at work, or during the period when the physical molecular forces are in operation? If the theory be true, it is surely a mistake to suppose that exertion causes an increased demand for food. What a mistake must not our fox-hunting country gentlemen make?

We pass over the section, in which it is argued that blood is not a stimulus to the contractions of a muscle, but rather to its elongation, and proceed to the next, which is intended to prove *that contraction is not produced by the stimulation of any mechanical agent.* The explanation offered for those cases in which contraction follows mechanical irritation is, that the contact serves to *discharge* something of which electricity is one of the signs, and that the contraction is one of the results of this discharge. It is admitted that this idea is not without its difficulties. One of these is, that the contraction ensues equally whether the contact be by means of a conductor or non-conductor. This it is attempted to get over by referring to the analogy presented by the electric organs of the torpedo, which, it is said, discharge their electricity when touched by a conductor or non-conductor, the only difference being, that with a conductor the discharge is felt, with a non-conductor it is not. And if this be so, it is inferred that in a muscle it is a matter of little importance whether the mechanical agent is a conductor or non-conductor, for all that is necessary is to suppose that the discharge does not extend beyond the muscle when a non-conductor is used. We know not on what authority this statement with regard to the torpedo is made, whether on experiments of Dr. Radcliffe's own or not, but we cannot but hesitate to accept it, so much does it seem to be at variance with the facts established by Matteucci, Walsh, Davy, and others. But, even granting that the fact is so, it cannot be regarded as affording a true analogy to muscles, as the experiments of Humboldt and others have proved that the fish has not

only a voluntary power of discharging its electricity, but even of determining the direction of the current.

Another difficulty arises from the fact that a muscle contracts with a very different degree of force when lightly touched and when briskly tapped; the theory would require that the discharge of electricity should be equally perfect in either case. Dr. Radcliffe suggests that the electric tension of the fibres being low, and their insulation so complete, it is necessary to bring them into close contact, as they would be by a sharp blow, before any discharge could be produced.

In neither of these cases does the reasoning of Dr. Radcliffe prove satisfactory, nor is it more so with regard to the contractions of the vesiculæ seminales, bladder, bowel, or uterus, which he also considers in this section. It is difficult to see why movements so decidedly of a reflex character as those concerned in the ejaculation of semen, should be introduced here; but the explanation offered for all is, that the sensory nerves are exhausted by the expenditure of nerve substance and nervous influence taking place in sensation, and that this exhaustion extends to the motor nerves, and that contraction is set up because these do not supply the usual amount of nervous influence. The whole argument is obscure and very weak.

It is not necessary that we should follow the remaining sections of this chapter, as we have given quite sufficient to show its gist and tendency. We must, however, notice the statement that light stimulates muscles to elongate, and that the pupil is closed by the elongation of the radiating fibres of the iris in consequence of the stimulus of light, whereby the margin of the pupil is pushed inwards. We pass on, then, to the second proposition, which is,—

"That muscular elongation is produced by the simple physical action of certain agents, electricity and others, and that muscular contraction is the simple physical consequence of the cessation of this action."

There are many objections to this part of the theory, some of which are stated and combated, though in some instances very feebly, more especially that drawn from the experiment of Schwann, whereby he proved, to our minds at least very completely, that the power of muscles decreases as the muscular particles approach one another, establishing a distinction between muscular contractility and molecular attraction, sufficient in itself to disprove Dr. Radcliffe's theory, for in molecular attraction the force increases as the particles approach

one another. However, an objection still more serious is not noticed, that is, that muscular relaxation (not elongation, as Dr. Radcliffe has it) is a passive act, not active, as the theory implies. This is sufficiently proved by the experiment of Œsterreicher, but still more convincingly by the observation of Bowman, that when a muscular fibre, with both ends free, contracts, the discs composing it remain permanently in the state produced by the contraction, but that, when the extremities of the fibre are attached, the discs become separated after the contraction has ceased, only by the stretching the fibre is subjected to. This one observation seems to us to be sufficient to overturn the whole of Dr. Radcliffe's theory.

The third proposition is, as we have already seen,—that the special muscular movements which are concerned in carrying on the circulation—the rhythm of the heart and those movements of the vessels which are independent of the heart—are susceptible of a physical explanation when they are interpreted on the previous view of muscular action. The interpretation, so far as the heart is concerned, is, that the arterial blood, driven into the coronary arteries by the systole of the ventricles, rouses the muscular and nerve currents, which produce muscular elongation by counteracting the molecular forces, and thus produces the diastole, and that the diastole continues so long as the blood retains its arterial properties; when, however, this yields its oxygen and becomes venous, the currents flag, the molecular forces predominate, a contraction ensues, and so the systole is renewed. When the heart is removed from the body, it is the atmospheric air pervading its tissue that produces the effect; so long as its oxygen is unappropriated by the tissues, it stimulates the currents, and elongation is produced, but as soon as it is consumed, a contraction takes place, whereby the de-oxygenated air is displaced and a new supply taken in. It is scarcely necessary to point out the deficiencies of this explanation; we may, however, ask, why it is on this showing that when the heart is divided to a certain extent by a longitudinal incision both sides preserve their rhythm, but that, on continuing the incision further, the contractions become irregular, and the rhythm is lost? And, again, why is it that on dividing the ventricles by a transverse incision the apex ceases to beat, but the remainder continues its action for a length of time, though both are equally exposed to the air? These facts are, we opine, more satisfactorily explained by a reference to the position of the ganglia in the substance of the heart near the base, than by Dr. Radcliffe's theory. We may also express a doubt as to whether the arte-

rial blood circulates very freely through the walls of the heart during the systole; if not, what is it suspends the molecular attraction, and causes the elongation of the fibres?

We have thus followed Dr. Radcliffe through his physiological reasonings, and attempted to show some of the points wherein they fail, and have indicated our preference for the generally recognised doctrine. Let us now turn to the second part of his work, in which he treats of the diseases in which muscular contraction is in excess, introduced by the following remarks:—

"Epilepsy is at once the great type of convulsive disorders, and the key to their interpretation. Epilepsy, however, is a name which indicates much less than it did formerly. Thus, it does not indicate the epileptiform convulsion which is connected with certain positive diseases of the brain, with fever, with certain suppressed excretions, with 'irritation' in the gums and elsewhere, or with the moribund state; and it is difficult to say what it does indicate, for, as our diagnosis gains in exactness, epilepsy changes more and more from a special malady to a mere symptom. At the same time it is, and, in all probability, it always will be, convenient to take an ideal type of epilepsy, and regard it as a special malady, for there are, and ever must be, numberless cases in which, in their earlier stages at least, it will be very difficult, if not impossible, to recognise the disease of which the convulsion is merely a symptom.

"Passing from this ideal form of epilepsy to the consideration of the actual disorders in which muscular contraction is in excess, it is found that these disorders may be conveniently divided into three categories, of which the distinctive signs are—tremor, convulsion, and spasm; but it must not be forgotten that such division is purely arbitrary, and that spasm, convulsion, and tremor, are continually occurring in the same case, and at the same time.

"The first category, in which the muscular disturbance takes the form of tremor, is that which includes the tremors of delicate and aged persons, of paralysis agitans, of delirium tremens, the rigors and subsultus of fevers, as well as the tremblings of slow mercurial poisoning.

"The second category, in which convulsion is the distinctive feature of the muscular disturbance, may be divided into two sections by the absence or presence of consciousness during the convulsions Where the consciousness is present, the convulsion may be called *simple;* where the consciousness is absent, it is *epileptiform*. Simple convulsion is that which is met with in the state called hysteria, in chorea, and in those strange affections which take an intermediate position between the two, as the dance of St. Vitus and St. John, tarantism, and other affections of the kind. Epileptiform convulsion includes the convulsions connected with certain diseases of the brain,—chronic softening, chronic meningitis, tumour, indu-

ration, hypertrophy, atrophy, congestion, apoplexy, inflammation—with fever, with certain suppressed excretions, with 'irritation' in the gums and elsewhere, and with the moribund state.

"The third category, in which prolonged muscular contraction or spasm is the distinctive state, includes catalepsy, tetanus, cholera, hydrophohia, ergotism, the rigidity of cerebral paralysis, the spasm connected with certain diseases of the spinal cord, and some other spasms of a minor character.

"The several chapters, as suggested by the previous considerations, will be—

"Chapter I. Of Simple Epilepsy; Chapter II. Of Tremor; Chapter III. Of Simple Convulsion; Chapter IV. Of Epileptiform Convulsion; Chapter V. Of Spasm."

The incongruous grouping together of the diseases included in the above categories is, perhaps, the necessary consequence of the doctrine on which it is founded, and seems to us to demonstrate its erroneous nature. How, for instance, can that system be correct which includes in one category the tremors of the aged, of delirium tremens, and the rigors and subsultus of fever? Then, again, the second category includes two classes of cases which are entirely distinct; and even of this category we find the second class, including convulsions, connected with acute and chronic disease of the brain, with fever and suppressed excretions, and with irritation of the gums, and elsewhere.

The following extracts will show the nature of the pathological views arrived at as to epilepsy, deduced from a consideration of the phenomena connected with the vascular system:—

"The frigid and clammy hand, the foot that will scarcely keep warm before the fire, the pale and sallow or dark and venous complexion, the habitual feeling of chilliness, are facts which appear to show that the circulation is wanting in vigour; and this inference is fully borne out by the pulse, which in simple epilepsy is rarely otherwise than weak and slow. Plethora, in the form so often exhibited in the butcher, is never met with, and feverish reaction is a rare occurrence, even as an accident. There are, indeed, cases of *epileptiform* disease, in which the circulation may exhibit a greater degree of activity, but these cases, as will be seen in the proper place, present no real objection to the conclusion that the habitual state of the circulation in epilepsy is one of depression.

"Nor is there any evidence of a contrary character in the fit itself. Upon the eve of the fit, if any change can be perceived, it is in all probability one in which the skin has become paler and more dusky than usual, and the pulse more feeble. At the instant of the fall in many, if not in all instances, a corpse-like pallor overspreads

the countenance—a phenomenon which can be only explained on the supposition that syncope is impending; a moment or two afterwards, a dull-red flush, rapidly deepening into livid blueness, or even blackness, takes the place of the paleness which had first overspread the countenance, the face and neck become frightfully bloated, and everything shows plainly that all respiration is at an end. This state of suffocation continues during the whole course of the convulsion, and so perfect is it that little or no arterial blood can find its way into the arteries during the convulsion. . . .

"Arguing, therefore, from the corpse-like paleness and comparative pulselessness of the onset of the paroxysm, and from the signs of positive and unmistakeable suffocation by which this stage of paleness and pulselessness is succeeded, the only conclusion would seem to be that the convulsion of epilepsy is connected with the want of a due supply of arterial blood. Indeed, the whole history of the paroxysm, as deduced from the condition of the vascular system, would seem to show that there is something utterly uncongenial between epilepsy and anything like arterial excitement.

"Nor is it any objection to this view, that the convulsion ceases when the blood has become thoroughly deprived of its arterial properties. On the contrary, the cessation of the convulsion at this time *may* be easily explained as the natural effect of the way in which the *nerves* must suffer from this very want of arterial blood. At any rate, it is certain that the nerves cannot discharge their office of conductors unless they are supplied with a due quantity of arterial blood. If, for example, the circulation in the hand be depressed or suspended by immersing the part in iced water, the power of feeling and of throwing the muscles into action, whether voluntarily or involuntarily, is partially or wholly destroyed. If the principal vessels of a limb be tied, a similar result ensues, until the collateral circulation is established. And hence it may be assumed, that there is a point in the process of suffocation, where, wanting the due supply of arterial blood, the nerves will cease to be conductors, and where, consequently, the convulsions will come to an end, —for, upon any hypothesis, it is evident that the convulsions will come to an end when the muscles are no longer required to respond to that change in the nervous centres which is concerned in producing contraction in the muscles."

It will be observed that the author is inconsistent with himself here, in speaking of a change in the nervous centres, as being concerned in producing contraction in the muscles, an inconsistency arising, no doubt, from the shortcomings of the theory. The phenomena presented by the nervous system are also held to indicate a state of inaction and exhaustion:—

"Interrogating the nervous system from a mental point of view, the facts will scarcely warrant the idea that epilepsy is connected with anything like over-action of the nervous system. On the contrary, everything seems to point to a state which is the very opposite of

this. Thus, the want of memory, the want of intelligence, the want of fancy, the want of purpose, which are habitual; the utter annihilation of everything mental in the fit itself; and the gloom and prostration which remain after the fit; all go to confirm the impression of mental inaction which is so generally conveyed at the very first glance by the dilated and sluggish pupil, and by the torpid features."

During the convulsion the brain is in a state of coma; it cannot be active because of the deficient supply of arterial blood, a conclusion confirmed by the experiments of Sir A. Cooper on the vertebral arteries. But it is asked, is there nothing else? is there no morbid irritability? But what is this state? Is it anything more than mere exhaustion?

"In difficult teething the strength is worn away by pain and want of sleep; in worm-disease the system is starved and exhausted by its hungry parasites; in uterine derangement the health is undermined, in all probability, by pain, or by sanguineous and other discharges. In each case there is unequivocal exhaustion of body and mind, and the symptoms of morbid irritability appear to be no other than the signs of such exhaustion. A weak person is more affected by the several agencies which act upon the body, because he has lost some of that innate strength which belongs to the strong person; and a person who is morbidly irritable is in reality one who, for want of this principle of strength, responds impatiently to the several stimuli which are appointed to call out his vital phenomena. In a word, this undue morbid irritability may be nothing else than the natural consequence of that general state of exhaustion, the signs of which are so legibly written upon the vascular and nervous systems of the epileptic. Indeed, after what has been said in the physiological premises, this is the only conclusion.

"For what, according to these premises, is the *modus operandi* of irritation? It is no other than this—that irritation, however brought about, acts by exhausting, and not by stimulating the nerve and muscle.

"And what, according to the same premises, is the significance of morbid irritability—of a state, that is to say, in which the muscles are more apt to contract when irritated, and more prone to remain contracted when contracted? It is not that these muscles are more supplied with nervous influence. It is that they are less supplied with this influence. Thus, the muscles of the two hind-legs of a frog become more irritable when the influence proceeding from the brain is cut off from them by dividing the spinal cord; and the muscles of one of these legs are rendered more irritable than the muscles of the other when they are cut off from the spinal cord by dividing the nerves where they leave the spinal column. It would seem, indeed, as if the disposition to muscular contraction were most antagonized where the largest amount of nervous influence was supplied to the muscles.

"There is no necessity, then, to look upon this morbid state of irritability as an evidence of the existence of any peculiar condition in some part of the nervous system; for, thus interpreted, it only signifies a state in which the muscles are ill supplied with nervous influence. Thus interpreted, indeed, morbid irritability only becomes another name for inefficient action of the nervous system.

"— The pathology of epilepsy, therefore, as deduced from a consideration of the phenomena belonging to the nervous system, is in harmony with what had been already deduced from a consideration of the phenomena belonging to the vascular system, and the conclusion is precisely what was to be expected from the previous investigations respecting the physiology of muscular action. From these previous investigations it was to be expected that coma and convulsions might go hand in hand together—for muscular contraction, according to these investigations, is to be looked for when a failure in the action of the nervous centres causes a failure in the amount of 'nervous influence' distributed to the muscles; and thus, this difficulty of the association of coma and convulsion being at an end, we need no longer repeat the questions which Foville asks despairingly—"Pourquoi tandis que l'intelligence et la sensibilité sont complètement abolies, l'action musculaire est elle si souvent partée au plus haut degré d'intensité qu'elle puisse atteindre? Pourquoi cette opposition si tranchée dans deux ordres de symptômes fournis par la souffrance du même organe? Comment se peut-il que la même altération survenue brusquement paralyse l'intelligence et la sensibilité, et excite au plus haut degré l'action des muscles? En d'autres termes, pourquoi, par suite d'un dérangement subitement développé, la portion des centres nerveux qui préside à l'intelligence et á la sensibilité est-elle anéantie dans son action, tandis que celle qui préside aux mouvemens voluntaires se trouve assez violemment excitée pour produire d'horribles convulsions?"

Apart from the peculiar physiological doctrines with which these views are coloured, we believe they present a true idea of the nature of most cases of simple epilepsy, and that the treatment recommended—good substantial diet, a judicious use of stimulants, the administration of tonics, and the application of counter-irritation, will do more for the relief of sufferers than any variations of the routine of bleeding, purging, and salivating that could be devised.

The views entertained by the author as to the diseases included in his first category, and in the first class of his second, may very easily be inferred from the exposition we have given of those held as to his "ideal type of epilepsy." With regard to those included in the remainder of the second category, and in the third, there is more difficulty. The leading principle inculcated is, that the convulsions only occur during the stages of collapse, either initiatory or secondary collapse, and at a period when a stimulating treatment is required. An examina-

tion of the diseases in these divisions, as we have already remarked, is the best refutation of the peculiar doctrines advocated. For example, with our present knowledge of reflex motor acts, who can admit that the convulsions from dentition, or from the irritation of worms, indicate a cutting-off of the supply of nervous influence from the affected muscles.

We have already said that the perusal of this work has afforded us pleasure. It is true, we cannot agree with the author, yet we can and do sincerely recommend the book to our readers, to those, especially, who value the cultivation of the science of medicine. They will find many facts that will, perhaps, be new to them, others placed in new lights, and the reasoning from all ingenious. To the so-called practical man, too, we recommend it, as affording many most valuable and important suggestions for the scientific treatment of not only the peculiar affections it specially refers to, but of disease generally.

A Three Weeks' Scamper through the Spas of Germany and Belgium, with an Appendix on the Nature and Uses of Mineral Waters. By ERASMUS WILSON, F.R.S. London: Churchill. 1858. 12mo., pp. 368.

WE have delayed our notice of this amusing as well as scientific book until the present Number of our Journal, being anxious that it should fall under the view of our readers at the period when any of them who possibly can do so are likely to take their holiday. Written in a light, easy, and, we had almost said, "scampering" style, it is certainly the most useful guide for any one about to take a short Continental trip. Mr. Wilson hurries us over the ground from London to Calais, through Belgium, up the Rhine, into Bavaria, Baden-Baden, and home again, touching, as he goes along, at the many celebrated watering-places which are to be found in that route. The medical man will not only find directions for his own guidance, but many valuable hints to enable him to prescribe these important therapeutical aids for his patients. There is no class of diseases for which mineral waters are so necessary as affections of the skin; and, consequently, Mr. Wilson is especially qualified to give the profession advice on their relative value; and in the Appendix, which occupies some forty pages, we have a condensed summary of the different mineral springs which have been noticed in the body of his work, in the account of his Tour. From it we shall give one short extract, illustrative of the information to be there obtained.

"THERMAL WATERS.

"The thermal waters belong to the various classes into which mineral waters, in general, are divided; some are *muriated saline*, some *sulphated saline*, some *carbonated alkaline*, some *sulphuretted*, and others *negative*. Their temperature serves to increase the power of action of the salts which enter into their composition, renders them more acceptable to the stomach, and enables the stomach to bear a larger dose than it could otherwise digest. The warmth is also serviceable as determining an action of the secreting and emunctory organs, particularly the skin. These remarks apply to the waters when taken internally; and the high temperature is equally powerful, as a medical agent, when the waters are employed externally, in the form of baths; being either stimulant or sedative, according to the degree of temperature, and according to the mode of administration of the bath. The thermal waters, again, afford us another important and valuable agent in the steam which they give off, and which, collected by an appropriate apparatus, constitutes a vapour bath."

In conclusion, we cannot speak too highly of this interesting volume. So graphically written is it, that such of our readers as are unfortunately compelled to stay at home this autumn may take a few hours' holiday in imagination, by devoting an evening to its perusal.

A Manual of Photographic Manipulation, treating of the Practice of the Art; and its Various Applications to Nature. By Lake Price. London: Churchill. 1858. Post 8vo, pp. 256.

Medicine and Medical Science derive so much important aid from the photographic art, that we expect for the future every student of medicine will learn its practice just as regularly as he learns to dissect. Before the discovery of photography, medical men constantly felt the great want of not being able to obtain readily delineations of disease. This is now removed; and every one, by a little study, and with not expensive apparatus, can by this art procure any number of faithful copies of diseased structure or appearance. Mr. Lake Price's Manual is especially adapted for the medical profession, containing, clearly set forth and in small compass, a full history of photographic manipulation, under the following heads:—First, the producing agents; second, the requisite apparatus; third, manipulations; fourth, subjects, their nature and treatment; fifth, printing processes; sixth, solutions and chemicals. It is a book that should be in the library of every member of the profession.

PART III.

MEDICAL MISCELLANY.

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY[a].

(*Continued from* vol. xxv. p. 478.)

SESSION 1857–58.

April 14, 1858.

Dr. R. Corbett, President, in the Chair.

Observations on Infantile Syphilis, with Cases. By Professor O'Connor.—"The subject which I intend bringing under the notice of the Society is not surpassed in interest by any in the whole range of medical science. It involves life both before and after birth, affects the peace of families in the most interesting social relations, and embraces questions of serious responsibility, both moral and legal, to the physician who may be engaged in the treatment of such cases. The difference of opinion amongst eminent men as to some facts and inferences relating to this subject makes it still more desirable that it should be brought under the notice of this Society, whose members have many opportunities of verifying or disproving the points in dispute.

"The disease may be considered, first, as it exists during uterine life; secondly, as to the causes which may produce it after birth, and whether it may be propagated farther than the infant affected. With reference to the first point, it may be laid down as the established opinion, that the father may, as it were, inoculate the ovum with syphilis, and the mother give birth to a diseased child, herself remaining uncontaminated; or the diseased mother may give birth to a syphilitic child, the male parent having no share in the communication of the disease; still more strange,

[a] These Reports have been furnished to us by Dr. S. Henry Hobart, Secretary to the Society.—Ed.

both parents might have been free from all vestige of disease long before the period of conception. This fact would not be credited unless it were corroborated, as it has been, by the most ample testimony. We have here a disease which has not potency enough to show itself by any external signs on either parent, still strong enough in the offspring to kill or disfigure. In all cases the growth of the fœtus appears to progress satisfactorily up to a certain period, namely, the fifth or sixth month, and then to die from the development of the poison within itself, and not from any change in the general health of the mother, or in the condition of the uterus or its appendages. The more the child becomes dependent on its own organization for the continuance of its existence and for its growth, the less it appears to be able to sustain life, and dies, as it were, of a species of syphilitic cachexia, or is born a puny, sickly infant. Sometimes, however, syphilitic children are born robust and apparently well nourished, but these are the exceptions. In all cases there is no mark on the child at the period of its birth to indicate the nature of its delicacy, the characteristic rash not appearing for several days afterwards. If it is thus impossible to diagnose syphilis in a living infant at the moment of birth, how much more is it difficult to recognise it in a still-born child! Is the physician, therefore, to wait till he sees a living child born with the syphilitic rash before he endeavours to eradicate the disease which may be the cause of so much domestic calamity; or, what should we deem sufficient evidence that syphilis is the cause of the death of the fœtus in utero? If a mother should give birth to two or three dead children in succession, about the fifth or sixth month, under nearly the same circumstances, that is, that she has had no accident, illness, or fright to cause the death of the fœtus, but that it died, as it were, of causes entirely independent of her, we should naturally inquire of the male parent whether he has had syphilis some time before marriage; and of the female such inquiries might be made, without exciting her suspicion, as may lead to a conclusion of her having been at some time after marriage even slightly affected with syphilis.

"The ascertainment of these facts, or even the first of the two, would be sufficient to justify the physician in placing both parents under the influence of a prolonged course of mercury. It may be said that a course of mercury is in itself an evil, and should not be resorted to except where a striking necessity exists. In answer to this it may be said that mercury may generally be given, if used judiciously, without any permanent injury to the constitution, and that the inconvenience attending its administration is not so great as to counterbalance, even in doubtful cases, the benefits which may accrue from its use. The following cases, out of many which have come under my notice, will illustrate the propriety of this course:—

"Some years since a lady gave birth to three still-born children in succession. At the birth of the third she came under my care. The child in each case arrived at about the fifth or sixth month,

and was born quite putrid, thus affording in itself no evidence of the cause of its death. On inquiring from the husband, it was ascertained that, some years before his marriage, he had syphilis, all trace of which had disappeared before this event. He was then in the enjoyment of perfect health. The wife had no marks of disease about her, except that she at one time remarked her hair had been unaccountably falling off. On these grounds both were submitted to a course of mercury, soon after which the lady became again pregnant, and gave birth to a perfectly healthy child at the full period. The wife of a respectable tradesman came to me about twelve months since, and stated she had been married about five years, and during that time had given birth to four dead children. She could not assign any probable cause, as she and her husband were in good health, and she was not exposed to any hardship. Having expressed a wish to see her husband, I ascertained from him that he had syphilis some time before marriage, of which he thought himself cured, but his wife showed some symptoms of the disease some time after, for which he got her treated, without acquainting her of the nature of her illness; that neither he nor his wife had since any symptom of the disease; and that it never entered into his head that it could be the cause of the premature birth of the children. I induced them both to submit to a prolonged course of mercury, which they did most patiently, and within the last few weeks the poor woman sent to me for inspection as healthy a child as could be seen. In either of these cases, if I had waited to see unmistakable symptoms of syphilis in the infant, I would be like the peasant who waited for the river to flow by before he would pass over, but by acting on strong probabilities, I was able to confer the greatest possible happiness on two families, and preserve the lives of many individuals subsequently. A third case came under my care, of a mother who had given birth to a putrid child, about the sixth month of pregnancy. In this case there was no doubt of the mother having been diseased, as she came under my treatment for syphilis some time after her marriage.

"After the birth of the child I prevailed on her to undergo a course of mercurial treatment, but her husband would not do that which would establish his guilt, which he always denied. In this case the child was born in strong health, but with a slight syphilitic rash, which was easily removed by treatment. I have never had the courage to administer a full course of mercury to a mother supposed to be carrying a syphilitic child, but have given mercurial alteratives in such cases, which I could not say were attended with beneficial results.

"Questions have arisen as to the cause of this disease, when arising after birth,—some asserting that it arises from contact of the infant with the vagina of the mother; and others accounting for it on the supposition that it may be acquired from the nurse's milk. These errors have arisen from not considering the fact already referred to, that the syphilitic infant never exhibits the rash for seve-

ral days, sometimes for months, after its birth. Another question, of more importance, and one not so easily disposed of, is, as to the possibility of the syphilitic child communicating the disease to a healthy nurse. The great majority of physicians, especially in this country, believe in the affirmative, whilst some men of considerable character doubt, if they do not entirely deny, the possibility of infection by this means. It must be confessed that, since Ricord's experiments to test the possibility of inoculating with the matter of secondary syphilis, the cases brought forward in proof of this fact (previously said to be universally observed) are not so numerous or convincing as might be expected. It therefore devolves on the members of the profession to throw as much light as possible on this important subject.

"A case of considerable interest occurred in this city some years since, in which the supposed infection of a nurse by an infant was made the subject of legal investigation. The nurse, previously healthy, got a sore on her nipple whilst nursing a child which was described as having the symptoms of syphilis. Some time after, she got a syphilitic rash, which was seen by several physicians. Her husband subsequently became infected, and she gave birth to a syphilitic infant, who died soon after. For these injuries to himself and his family the husband brought an action, and after the closest investigation by the Assistant Barrister, a decree was obtained for the amount sought; thereby establishing the serious legal responsibility both of the parent and physician who may give out such a child to nurse without apprizing the nurse of the risk she thereby incurs. Mr. Acton, in relating this case in his valuable work on Syphilis, incorrectly states that no decision was come to by the judge who tried it. The following case occurred in my practice since:—A delicate child was born of parents supposed to be perfectly healthy, but the father having led a dissipated life before marriage, I was the more ready on that account to recognise a slight syphilitic rash on the child, though I dared not express my suspicions to either parent. The mother refused permission to give the infant the smallest particle of medicine, and it soon pined away and died, but previously the servant who took care of the child, and frequently caressed it, was seized with an eruption which was pronounced at one of our infirmaries to be syphilitic—the young woman, a person of excellent character, all the time protesting her innocence of having got the disease in the ordinary way. In this asseveration I entirely concurred, being convinced that the disease was acquired from the infant, with whom she slept. My long connexion with the workhouse brought under my notice many cases of this nature, though the testimony of their truth was not as convincing as of those I have related. How these facts, and several similar, attested by surgeons of the first eminence, can be reconciled with the result of M. Ricord's experiments, it is difficult to say; but that infantile syphilis should differ from other forms of secondary syphilis is not to be doubted, if we credit the extraordinary

fact stated by Mr. Collis, that the diseased child cannot infect its own mother, though capable of communicating the contagion to any other nurse.

"In conclusion, it may be asserted that the almost universal opinion of the profession in this country attests the infectious nature of infantile syphilis, and that it is the duty of every physician to act on this belief where such serious consequences are involved."

April 28, 1858.

Dr. R. Corbett, President, in the Chair.

Hydrothorax.—Mr. Orpen exhibited a lung, and detailed the following case to the Society:—

Patrick Barnane, aged 35, a labourer, came into the Cork Union Hospital, April 13, 1858, under the care of Dr. W. C. Townsend. He states that he has been ailing since Christmas, at which period he was in bed for a week, with a stitch in his left side; he was able to resume his occupation, and continued working up to ten days previous to his coming to the hospital. On admission, his breathing was very difficult and rapid; his face and lips were of a dusky bluish colour; there is no movement of the left side of his chest, which is bulged out and larger than the right; respiration abdominal and by right lung; he is very feeble, and cannot lie on his back nor on the right side; his pulse is rapid and small; percussion gives an intensely dull flat sound in every portion of the left side of his chest. On applying the stethoscope, it was found that there was no air passing into the left lung; the sounds of the heart were inaudible; bronchial râles all over the right lung; ordered to have a powder containing calomel, 1½ grs., powdered squill, 1 gr., nitrate of potash 10 grs., every three hours; and a turpentine stupe applied three times during the day over his chest and left side, and to get 1 oz. of whiskey every four hours.

15th. Is a good deal relieved; the dyspnœa not so distressing; one powder every six hours; continue whiskey.

16th. His gums are touched; he says he feels much better; omit the powders.

Compound powder of jalap, 1 drachm three times daily; half a pint of beef-tea; continue whiskey.

18th. Is not so well to-day; the dyspnœa has somewhat increased; there is general anasarca; his feet are swollen; feels very weak; stop his powders; let him have 1 oz. of an aromatic mixture, every second or third hour; continue the whiskey, beef-tea, &c. He continued sinking, and died on the 22nd.

Autopsy, 26 hours after death. Œdema of the body generally; the left side of his chest was enormously distended. On removing the integuments in the usual way, and cutting through the cartilages of the ribs of the left side, a jet of fluid escaped; on raising the sternum the entire pleural cavity on the left side was found to be completely filled with a transparent fluid of a pale lemon colour, to the amount of seven or eight pints; a great quantity of yellowish-

white lymph was seen floating in this fluid. The pericardium, especially the portion next to the left lung, was coated all over with lymph. On emptying out the fluid, the lung, which was very much collapsed, and about the size of a large orange, was found suspended in the upper and back part of the pleural cavity by two thick and strong filamentous bands, one of which was attached to the side of the pleura between the fourth and fifth ribs; the second was adherent to the pericardium and diaphragm. There was also a quantity of fluid in the bag of the pericardium; the heart appeared soft and flabby; no alteration was observed in its valves.

Case of Deranged Uterine Function, with Skin Affection. By John Williams, M.D.—"I am induced to bring this case before the Society this evening chiefly through a desire to become acquainted with the experience of those members present who may have had many such like under their observation. It is the first that has occurred in my practice, and I shall therefore confine my remarks to a detail of the existing symptoms, the treatment adopted, its result, and the conclusions which I arrived at as to the nature of the case from my review of the whole. I therefore select the two prominent features in the case as its title, and shall merely further premise, that I would desire of those who may hastily conclude that I erroneously regard them as cause and effect—which I certainly do—to withhold their judgment for the present.

"Miss —— aged 28 or 29, of perfectly healthy appearance, and of what is commonly known as the nervous temperament, consulted me in November, 1857, on account of a most distressing affection of the skin, which made its appearance for more than three years, at periods varying from six weeks to three months, and was accompanied by intense itching; so troublesome was this symptom that she dignified the eruption with the style and title of 'mange.' The history she gave me of her case was, that about three years ago she suffered from great mental distress, occasioned by the death of a very near relative, and that since then she has suffered from 'this rash,' which, without any premonitory symptoms, suddenly comes on. It appears as raised elevations of the skin, varying in shape and size, of a white colour, and attended with great heat and intense itching. The trunk is more thickly studded over with them than the extremities—the head and neck particularly—the ears often become much enlarged. The constitutional symptoms that are present while the rash is coming out are headach, referred to the frontal region; nausea, great heat of skin, and thirst. The duration of the rash is generally from fifteen to twenty-four hours; after this period very slight traces of it are to be seen. On making particular inquiries as to the state of her health, I was assured it was very good. I ascertained, however, that the catamenia, although regular in making their appearance, were so scanty as scarcely to deserve the name. She also stated she is very easily depressed, but in all other respects she has no further complaint what-

soever to make; she sleeps well and eats well, and can confidently state that no article of diet, such as fish, salad, vinegar, &c., has ever induced the skin affection; neither has change of air, nor any other appreciable cause. In concluding this account she told me she had taken either 150 or 250 (I forget which) of Blancard's pills of iodide of iron, but did not experience the least good effect from them; and had also taken a mixture which contained aromatic iron mixture, with the compound decoction of aloes, which I had previously ordered with good effect in a case of amenorrhœa that happened to have fallen under this lady's observation; but it produced griping, and she was obliged to stop it. I was asked for my opinion as to the nature of this case, which hitherto had not proved amenable to treatment, and I must confess I felt in rather an awkward position; however, I gave it as my decided conviction that deranged menstruation was the cause of the skin affection, and that if treatment succeeded in restoring the healthy function of the uterus, it was more than probable the distressing affection of the skin would cease to appear. How far, Gentlemen, I was justified in making this statement, you will please to offer your remarks on. I did consider the case in this light. The skin affection evidently was urticaria. I ordered her one grain and a half of quina in pills, to be taken twice daily, and a mixture of aromatic iron mixture, with the compound decoction of aloes, at bedtime; also two leeches to be applied to the inguinal region at the time the menses usually appeared; tepid mustard hip-baths, and generous diet. From the griping that it occasioned, I was obliged to discontinue the aloes, but the remainder of the treatment was steadily persevered in. At the next menstrual period, the discharge was much augmented, and during four months she had but one very slight return of the rash. Her strength and spirits were now so much improved, that she stated the continuance of the quina treatment had almost restored her to perfect health, and she then discontinued all treatment. At the next two menstrual periods the discharge was nearly as scanty as before. She now got an attack of measles, from which she quickly recovered, and about three weeks ago called on me to ascertain if it were my wish that she should renew the same treatment. I recommended it in part, as there seemed to be considerable debility after the measles, and the menses were as scanty as before. In two days she again called to say she had had in the interim as severe an attack of 'the rash' as ever. At this time, with such debility present, after rubeola in an adult, I could not be surprised at its appearance, and I am rather sanguine as to its ultimate removal, if the normal function of the uterus be permanently established; even the patient's friends remarked, that from the circumstances that attended the late attack, they felt assured 'one hinged on the other.'

"Dr. Montgomery, in an article 'On the Reciprocal Sympathies between the Uterus and Bladder in Woman,' read before the Medical Association of the College of Physicians in November, 1857, states that it is familiar with us all, that, in the human female, 'there is an

ultimate reciprocal sympathy between the uterus and bladder, and *other parts of the urinary apparatus*,' and illustrates these remarks by cases: amongst them he gives a case in which distressing itching of the pudendum existed to such a degree that life was felt a burden. Every description of lotion and ointment had been used in vain. Ultimately, examination showed an intense congestion of the cervix uteri, which was made the object of treatment, and on its removal the pruritus, and all its miserable concomitants, ceased. Now I believe the case I have brought before this Society is illustrative of an existing sympathy between the skin and uterus, which I think is further borne out by the result of treatment. Dr. Montgomery's experience has not led him to recognise such, but I must candidly say that, with due deference to one whom I consider as the best authority on the subject, I could not possibly be led to any other conclusion.

"May 10. Up to the present time there has been no reappearance of this distressing skin affection."

May 12th, 1858.

Dr. R. Corbett, President, in the Chair.

Case of Fever, with unusual Symptoms. By Wm. Cummins, M.D. —"I copy the following case from my note-book :—

"December 2, 1857. Master G., a fine boy, five years old, began to exhibit symptoms of general delicacy some months since, consisting of debility, loss of appetite, and flying pains in various parts of the body, with constant pain in the hip, and dragging of the corresponding limb when walking.

"These symptoms were met in the usual manner, but without much decided or permanent improvement, except in the local affection. About ten days since he began to suffer from the ordinary remittent fever of childhood, which was removed at first by treatment, but recurred within the last few days; up to to-day, however, leaving him in tolerable health and spirits every morning. He is now feverish, complains of nausea and headach, as well as of a severe pain in left ankle.

"3rd. Still very feverish, with partial diaphoresis; urine depositing copiously a white precipitate; headach, nausea, great thirst, partial sweats, flying pains in all the joints and back, severe pain of left instep and ankle, which is red and tender.

"4th. Rather better, but the pain and redness of ankle still continue, and have extended upwards about half the leg.

"5th. The redness and swelling have subsided, but he is still feverish.

"6th. Spent a bad night, and appears very low and weak; pulse 130, feeble; sordes on lips, tongue brown and dry; conjunctivæ much congested, but no head symptoms; urine depositing phosphates copiously; discharge from bowels of a bluish colour.

"7th. Much in the same condition, but the urine, which is still

loaded with phosphates, appears yellow, as if tinged with bile; the conjunctivæ and skin are also of a pale lemon-yellow colour.

"8th. Rather improved; passed two lumbrici this morning.

"9th. Spent a bad night, with constant muttering delirium, though perfectly conscious when roused; pulse 140, very feeble; tongue has continued all along brown and dry, and the lips and teeth covered with sordes; gums are soft and bleeding slightly; urine copious, has ceased to deposit, but is very yellow and high-coloured; at no time during the illness has there been any tenderness or pain over any part of the abdomen, but now patient makes some complaint when pressed upon the hepatic region.

"During my afternoon visit I found him continuing much in the same condition, but towards evening I was sent for in a hurry, as he had passed several black stools, and had twice vomited a matter which, on close examination, presented all the characteristics which I have observed in the black vomit of yellow fever. He continued perfectly rational up to the moment of his death, which occurred about two hours after.

"The symptoms which this case presented previous to fully developing itself, made me anticipate acute rheumatism, and as such I treated it, but the train of symptoms which commenced on the 6th, and continued up to the day of his death, soon made me suspect that I had a far more fatal disease to cope with.

"From day to day, as I watched the progress of symptoms, I became more and more reminded of that disease which numbers its victims by thousands within the tropics, but rarely carries its devastations to more temperate regions, and as yet has only been observed as isolated cases in this country. I did not, however, at the time believe the case to be yellow fever, or treat it as such, and although this is, I think, to be regretted, as far as the individual case is concerned, yet it proves I was not biassed in favour of any particular opinion, when, on afterwards reviewing my notes, taken carefully from day to day, I could not help coming to the conclusion, that if this case had occurred in any of the habitats of yellow fever, there would not have been a second opinion about pronouncing it to be that disease.

"At the time this case occurred yellow fever, having transgressed its ordinary bounds, had visited Lisbon, and was making fearful ravages there. I believe also that when the cases of yellow fever observed and published by the late Dr. Graves occurred in the Meath Hospital, Dublin, it was also raging in the south of Europe. Such coincidences ought to lead all medical men to be watchful and suspicious whenever the epidemic rages so much nearer than usual to our shores.

"If I had had the least expectation of meeting a case of yellow fever, or even such a close resemblance to it in Irish practice, I should without doubt have treated my patient with quina in large doses, and I am certain he would have had a far better chance of recovery."

The PRESIDENT then read the following case of *Inversion of the Uterus*:—"Some years ago I was called by a medical friend to see, in consultation with him, a lady aged about 26, who had been several days previously confined, under the attendance of another practitioner. The latter had the care of the patient to within a day or two of my visit, and had stated to the family that the patient was suffering from '*uterine tumour*.' But the friends, finding her symptoms unimproved, dismissed him. The chief cause of alarm was continued hemorrhage, deeply influencing her health, and, of course, confining her to bed. As far as we could learn, the case (a primipara) during labour had progressed most favourably, and the child was born within the usual period. She had previously enjoyed good health. We found her debilitated, pale, and anemic; pulse small and frequent; tongue white and flabby, with nausea, and clammy perspiration. It was stated that she had been taking nourishment in various forms, with wine, and did not reject it. She had no pain, and the chief complaint was the continued flow per vaginam. On examination there was a prominent tumour, easily reached by the finger, which, on pressure, was unyielding, and at the upper portion was felt a ring of some thickness, around which the finger could be passed. There was no hypogastric tumour, and I confess I felt, in common with my confrere, much difficulty in forming a diagnosis in the case. We both feared exhibiting any doubt, and remained for some hours in the house, so as again, if possible, to satisfy ourselves as to the cause. In the interim we directed the use of an astringent lotion, continued the nourishment with wine, and at the end of three or four hours again examined, when both came to the conclusion that it was, beyond doubt, an inversion of the uterus. In forming this opinion we had not at the time anything to guide us as to how it had been caused. Having made up our minds, we told the patient's husband that the case was a hazardous one, and suggested that under the circumstances, the advice of some practitioner of longer experience than ours, should be sought for. This was at once assented to, and a medical man of long standing, named by the husband himself, was summoned, and arrived in the evening. Without communicating our united opinion, further than that a tumour was to be felt, we requested that he should satisfy himself as to its nature. He made two or three examinations at intervals, and at length pronounced it to be polypus uteri, with a thick stem. To this we then demurred, and gave our reasons: among the rest, the want of hypogastric tumour, which he most positively stated did exist, but which we again and again said we could not distinguish. He also said that it was only a short time previous that he and another practitioner, a man, too, of extensive practice at the time, had found great difficulty in diagnosing a similar case, but that they eventually operated, and brought off a large polypus. The responsibility in the present case was then thrown upon him, as we distinctly refused to take any on ourselves, as to his proposition of applying a ligature.

He did, however, apply the ligature, and that most dexterously, but on his tightening it the poor patient complained of acute torture. This made no impression on him, and after recommending continued doses of opium he left for home, a distance of twelve or fourteen miles, and my friend who had been in attendance with me was also obliged to leave, so that the conduct of the case devolved upon me. But for the friendship which I entertained for the operator, I should not have undertaken the office, and I confess, when he so perseveringly insisted on the case being one of polypus, that I began to doubt my own opinion. In the course of the night I was summoned in consequence of the agony which the patient was suffering, despite the opiates which she had taken. It was truly painful to witness her sufferings, and I unhesitatingly loosed the ligature, and procured her ease, so that she got some sleep. I sent specially for the operator, who on his arrival seemed much disappointed at the result, and not well pleased at my having relaxed the ligature. He again tightened it, and the same suffering ensued, but this did not seem to convince him, as he said it should be further tightened on the following day. This trouble he was saved, as within the next eight or ten hours the poor patient succumbed. The question then arose, how were I and my friend to prove that we were right, and Dr. —— (long since dead) wrong. We proposed a post-mortem, and after some little difficulty the husband assented to it, provided we could perform it at a very early hour in the morning. This we promised, and arrived at the house before 5 o'clock of a summer's morning. The husband met, and told us that the females of the family had peremptorily refused to allow a necropsy. We were, of course, obliged to submit, and on going into the room where the body lay, we found a fond relative, aunt to the deceased, keeping watch at that early hour. The double canula remained in position with the ligature attached, and the thought struck me, that by a little stratagem, I might, if the ligature had made a deep impression, possess myself of the separated portion, whether of uterus or polypus. I accordingly requested the old lady kindly to bring a basin of warm water and a sponge, for the purpose of removing the instrument, and while she was absent I introduced my hand into the vagina, and without much difficulty brought away the portion below the ligature. I hastily put it up in a bladder which I had provided, and we retired. On arrival at my house, a distance of four miles, we examined, and, alas! fully proved that we had the inverted fundus uteri. Next morning I took it to the operator, who had heard of her death, but who expressed to me his great regret that a post-mortem had been refused. I at once produced the glass jar, containing the preparation; and he confessed his error. He wanted to publish the case at once; I said it would be very unwise to do so. He said, in reply, that it ought at some time or other be given to the profession as a warning, and at the same time made me promise to do so. I have always felt a delicacy about it, and in truth I had forgotten it until the case of Dr. Tyler Smith in a late Number of the Lancet

brought it to my recollection; and having mentioned it at the last meeting of Council, Dr. O'Connor urged me to give the detail, which I fear I have done at too great length.

"Some time after the death of this patient, I was called on to see a lady, a friend of hers, who spoke freely of what she considered the cause of the fatality, and of which I for the first time heard. It seemed that this lady was in the room with the deceased pending her travail, and she said that, after the birth of the child, the medical attendant, finding that the placenta had not been thrown off, proceeded to remove it, and used great violence, causing the patient to scream out, and say 'he was killing her.' Of the truth of this I had no reason to doubt. He has long since been called to his account."

Dr. R. Corbett, President, in the Chair.

May 25, 1858.

Dr. William C. Townsend exhibited the heart of a man named Murphy, aged about 23 years, who had been under his care for about four months, in the Cork Union Hospital, labouring under extensive heart disease.

He had been in the South Infirmary for three months previous to his admission.

The action of the heart was very strong and tumultuous, with great increase in extent of the area of impulse, a distinct double bruit of a sawing character was audible all over the præcordial region, and extended up the cervical vessels; strong jugular pulsations existed on both sides. The plan of treatment adopted was, avoidance of all stimulants, the occasional use of alteratives and diuretics, a nutritious but unstimulating diet. Under this treatment he continued to enjoy very tolerable health until about the 1st of May, when he caught small-pox from one of the patients; and although it was of a very mild character, he became greatly depressed: from this depression he never rallied. He quickly became quite anemic, the heart acting with great force, the pulse at the same time very quick and feeble—"the pulse of unfilled vessels." He died on the 24th of May.

On examination twenty-four hours after death, the heart was found to be enormously enlarged, the pericardium firmly attached to it in every part; it weighed 48 ounces. The left ventricle was very much dilated, hypertrophied, and capable of containing at least one pint of fluid; the right side of the heart was also hypertrophied and dilated; the valves were healthy; both sides contained large clots of dark blood.

Epidemic Committee.—It having been thought desirable that an annual report of the epidemic diseases of Cork and its vicinity should be published by the Society, a sub-committee had been appointed at a former meeting for that purpose,—the intention being merely to record the main facts as to what epidemics prevailed

during each year; what unusual symptoms might be observed in each, whether as to symptoms, effect of treatment, or as to the locality in which they prevail; and any other points that may appear of interest to the gentlemen drawing out the reports,—such a course being considered of more practical utility than that of giving a statistical account of the exact number of cases that shall from time to time occur.

In compliance with this determination, the following reports were now read, though in many respects very defective (in consequence of the late period at which the undertaking was entered upon, the very imperfectly organized mode of acquiring information, and the still more unsatisfactory nature of the few replies made to inquiries for such information).

Report on Ague. By Dr. Cummins.—"As I have been unable to procure statistics from the various districts in Cork and its vicinity, I am obliged to confine my remarks on ague principally to the disease as it appeared in my own (Blackrock) district. This is less important, however, as ague has been far more prevalent here than in any part of the county, in consequence, I believe, of the close proximity of the Park, which has been more or less in a marshy condition since it was reclaimed from the river (where it previously existed as a mud-bank uncovered at low water), about fifteen years ago.

"Previous to the year 1844, or rather for more than twenty years antecedent to that period, ague was almost unknown in Cork; indeed, many physicians of large practice had never seen a case of it, and then it commenced very gradually, year after year, increasing its ravages, until it became a perfect plague in 1857, the year I have to report on. In my own registry of cases I find 113 of intermittent fever, and 62 of continued; and these latter ought for the most part to have been entered under the head of ague, as they were cases of that disease, which commenced with a single paroxysm often of six or eight days' duration. It was when the Park was dried and cracked by the sun, with a subsoil of damp and slimy mud, that this excessive virulence occurred. But although I think the Park must be connected with the ague in its vicinity, and indeed for several miles round, yet as the disease has been more or less prevalent in parts of the county too remote from this source to be affected by it, there must have been some general epidemic tendency to the disease, or some peculiar atmospheric condition, during the absence of which for many years local miasmatic poisons were impotent[a]. I am not aware that ague has ever been attributed to a more general cause than marsh influence, and yet I think the long absence of the disease from the county of Cork, and its almost simultaneous appearance in a great number of localities, can be explained in no other way; and

[a] Another fact in corroboration of this view has been mentioned to me by my friend, Mr. F. Jennings:—that ague, which has been long absent from Lincolnshire, where it formerly reigned triumphant, has returned within the last two or three years, and is at present exceedingly prevalent there.

if such is really the case, then marsh influence bears only the same relation as a cause to ague, that decaying animal matter does to typhus; in fact, it becomes rather a predisposing than an exciting cause of the disease.

"During the early months of 1857, the type of intermittent fever was generally quotidian, and late in the year almost all tertian, a few being what is called double tertian. Some few of the cases more closely resembled remittent than intermittent fever, and one of these was accompanied by intense maniacal excitement and delirium, with exacerbations every afternoon. One case—and it was a most interesting one, the particulars of which I hope at some future period to lay before the Society—gradually degenerated into hysteria, with spinal irritation, and in succession presented all the most alarming symptoms of hepatitis, peritonitis, laryngitis, pleuritis, and intense dyspnœa. Her recovery was tedious, and again this spring, when ague reappeared, her spinal irritation, preceded as before by ague, reappeared also, and she is at present in the South Infirmary, under the care of Dr. Lloyd. Another very unusual and interesting case also occurred: a pregnant woman was attacked by ague, which partially yielded to quina; at the full time she gave birth to a child, which had the characteristic appearances of skin which usually accompanies ague, and 'shook' the day after it was born. I believe this is the earliest instance on record of ague in the infant. In childhood ague has been common, and is more manageable than in the adult, if we except the difficulty of making them take so bitter a medicine as quina. The spleen has been remarkably free from enlargement in most cases, which I attribute in some measure to my treatment, a most important point in which is to secure a free flow from the tributaries of the vena porta, *on the day of the paroxysm.*

"Quina is of course the sheet-anchor; it rarely fails to cure the disease in a few days, if given in sufficient doses, but I must admit that relapses are numerous, and are only to be prevented by leaving the ague district, or continuing the medicine (which the patient soon acquires a taste for) in small doses for a considerable period. I can scarcely say I have given arsenic a trial, as although I have much faith in it, especially in cases where quina has been *irregularly* given, until the system is saturated with it, without the disease being cured, it is not suited for dispensary practice."

Report on the Exanthemata, &c. By Drs. Cremen and S. H. Hobart.—During the winter of 1855–56, the most severe epidemic of small-pox which had appeared for many years in this county prevailed throughout Cork and its vicinity. The number attacked was very great; and in a large proportion of cases the disease was confluent, and in every respect very severe. During the same period scarlatina also prevailed to a very great extent, and took on a character heretofore almost unknown; for, while that disease is usually of a remarkably mild character in Cork, the epidemic of this period,

and which continued for some of the early summer months, was of a remarkably fatal character; many cases being carried off from swelling of the glands of the neck (this occurring in the submaxillary and both parotidean regions together, soon caused death by suffocation); in other cases, fatal sloughing of the throat took place; while many died apparently by the debilitating influence of the typhoid form of fever, which in most cases accompanied the disease. About midsummer, however, this disease, though it did not disappear, ceased to be formidable, as it now returned to its ordinary mild type of this part of the country; and towards the close of the year it had almost disappeared. Measles also became very prevalent during the summer of this year, but were by no means of the serious character assumed by the small-pox and scarlatina. It was probably owing to the extreme severity of these diseases during this period that the year 1857 appeared to be so remarkably healthy; for, though an epidemic tendency to all still existed, as proved by the occurrence of several cases in various localities, the number attacked were comparatively few, and the amount of mortality particularly small. It may, in fact, be briefly stated that some half-dozen cases of small-pox did occur, of a mild and manageable character; that scarlatina prevailed, more or less, during the entire year, but chiefly so during the early and late months, and always in a mild form, while it was comparatively seldom followed by anasarca, whereas that was a very frequent sequela in the epidemic of 1856. In the north side of the city a considerable number of cases of cynanche occurred, in which no trace of eruption could be detected, though carefully looked for; but of these a larger proportion became anasarcous afterwards than of those affected with the true form of scarlatina. In several cases of the latter affection (i. e. scarlatina) a remarkable and most distressing sense of formication was felt over the surface of the trunk, particularly of the back. This was chiefly observed when diaphoresis was just commencing, and sometimes continued to come on at intervals for several weeks after all other symptoms of the disease had disappeared. A medical man, who experienced this symptom in his own person, says that "he always felt (when profuse perspiration was coming on under the influence of diaphoretics) as if a number of pins were being thrust into the skin; or as if the pores of the skin having become obstructed, the perspiration, which now became pent up, was endeavouring to force its way to the surface; and this, occurring in innumerable points, caused this intense sense of a sort of lancinating formication which compelled him immediately to throw off the clothes, so as to check the perspiration, and at the same time to scratch violently such parts of the trunk as were accessible to the hands." Measles also prevailed during the entire year, but not to as great an extent as scarlatina; in some districts appearing to alternate with the latter disease, with regard to the period of its greatest prevalence, while in other districts the two diseases occurred together, often affecting different children in the same house at the same time.

Erysipelas did not occur as an epidemic at any period of the year, and such casual cases as did occur were of a favourable character.

This year was particularly free from diarrhœa and dysentery, while the cases of the ordinary Irish cholera were decidedly below the average number.

Report on Fever, 1857. By JOHN F. M'EVERS, M. D., one of the Physicians to the Cork Fever Hospital.—"The number of persons admitted into the Cork Fever Hospital for the year 1857 was considerably less than the admissions of the previous year. The highest number admitted was in May, and the lowest number in the month of October.

"The type of fever presented the usual varieties of typhus, typhoid, and synochus. Cases of the bilious, remittent, or gastric form were comparatively few.

"The summer of 1857, protracted far into autumn, was the hottest we had experienced for many years; it was hotter than the remarkable summer of the preceding year, which was the hottest since that of 1846. The protracted heat of both summers was not, however, aggravated by drought,—a circumstance to which, perhaps, may be attributed the infrequency of cases of bilious, remittent, or gastric fever, which had been so common in previous years. Many cases of typhus admitted in the winter months were complicated with pneumonia, which generally yielded to a steady perseverance in a stimulating treatment, especially wine and brandy or whiskey emulsion. When pain of the side was present, indicative of the presence of pneumo-pleuritis, great benefit was derived from the employment of dry cupping, leeching being seldom resorted to, except when the disease attacked young persons of vigorous constitutions. In the dyspnœa attendant on this form of fever, I have found the greatest advantage from the use of chloroform by means of inhalation: the mode employed being a handkerchief, upon which was sprinkled from 30 to 40 drops of the remedy. This is repeated occasionally, and the relief afforded is, indeed, very remarkable.

"Whilst on the subject of chloroform, I may also mention that in my hands the internal use of this agent has proved, in many cases of fever, highly beneficial. For instance, in those cases of typhus in which head symptoms, with loss of sleep, set in at an early period—we are sometimes loth to resort to opiates to produce sleep; and it is here that the internal administration of chloroform has been singularly useful. I give three doses of 30 minims each—one every two hours; the second generally produces sleep. Another distressing symptom in fever, generally speaking, very little under the control of ordinary remedies—I mean singultus—is often removed by chloroform. For that symptom I have found the best mode of administering the remedy is in its pure state,—a few drops occasionally on a lump of sugar.

"The *quæstio vexata* of the identity of typhus and typhoid fever

has occupied me a little; and the many cases which have presented themselves to my notice within the last year, exhibiting those peculiarities observed and described by writers of the present day, as constituting the disease named typhoid fever, leave me no doubt that this form of fever must in future take a place in our nosology as a disease differing essentially from typhus or from any other form heretofore described."

Case of Puerperal Mania. By Lombe Atthill, M. B., Licentiate of the Colleges of Physicians and Surgeons of Ireland.

The following case, though not possessing any very new feature, yet being in some respects interesting, I shall briefly detail:—

Mrs. M., aged about 25, was delivered, after an easy and natural labour, at 4 o'clock in the afternoon of Saturday, 15th January last. This was her fourth confinement. Her previous labours had all been natural, and her convalescence on each occasion rapid. It appears (for she was not at this time under my care) that she was well for about three hours after delivery, when she had a slight hysterical fit, and spoke incoherently; but this passed off rapidly, and did not cause much alarm. After a little time, however, she again began to wander, and when her medical attendant visited her at 11 o'clock at night, he found her in a state of great mental excitement, it being a matter of difficulty to restrain her from jumping out of bed. He administered a draught, containing tincture of hyoscyamus, solution of acetate of ammonia, and aromatic spirits of ammonia. At about 11 o'clock on the following morning I saw her for the first time. She was then evidently much quieter; in fact, were it not that she answered my questions abruptly, and started at the least noise, I should not have noticed anything extraordinary in her manner. She had not, I learned, slept even for a moment since her delivery. She complained of intense headach. The pulse was small and rapid, 130 in the minute; the lochia were completely suppressed, but there was no abdominal tenderness. I ordered her to be kept perfectly quiet, and to take a tablespoonful every hour of a mixture containing 1 drachm of the solution of morphia, and 1 drachm of antimonial wine in 8 oz. of camphor mixture. Light unstimulating nourishment was also prescribed. During the following twenty-four hours no decided change took place. She frequently spoke rapidly and incoherently, but was never violent. On the following morning (Monday), I was disappointed at finding that, though quiet during the night, she had never closed her eyes. This circumstance, coupled with the very rapid pulse, caused me considerable anxiety, although she was perfectly rational and steady in my presence, and did not wander at all. At my evening visit I thought her better; the pulse, however, was as rapid as ever. Wishing to procure sleep, I ordered her a draught, contain-

ing half a grain of morphia; but at 10 o'clock, before this was administered, without any premonitory symptom, she became violently maniacal, and had to be restrained in bed by main force. She was induced to take the draught, but it produced no effect. At 3 o'clock in the morning I was summoned to see her. I found her sitting up in the bed, talking rapidly and wildly, declaring there were rats in the bed, which her friends would not remove. Opium, both alone and combined with antimony, having failed, I next administered chloroform internally, giving 50 drops in a little water, and ordering 30 more to be given in an hour. This seemed to quiet her for a time, but no sleep was procured. At 9 o'clock next morning she was ordered a mixture containing 2 grains of morphia and $1\frac{1}{2}$ drachms of antimonial wine in 8 oz. of camphor mixture; a tablespoonful to be taken every hour: and at noon, no improvement having taken place, two tablespoonfuls were administered for each dose. The whole of this mixture was taken before 9 o'clock P. M., without producing the slightest effect. On visiting her at this hour I found her in as unfavourable a state as ever. She was sitting up in the bed, raving in the wildest manner, and was every moment tossing the bedclothes about, in her efforts to catch the rats and other disagreeable animals which she asserted were under them. She had now passed seventy-five hours without sleep; there was no change whatever in her state, excepting that her pulse was evidently weaker; I therefore decided to try whether any benefit would result from the inhalation of chloroform, determining to give a full opiate when she was brought fully under its influence. I accordingly proceeded to administer it in the usual way. She resisted so violently at first, that it required the united strength of three persons to hold her down. She speedily, however, began to experience its effects, and in a few moments was completely quiet and unconscious. I managed to keep her in a state of deep insensibility for fifteen minutes, when I placed a grain of the muriate of morphia on her tongue, continued the inhalation of the chloroform for half an hour more, and then gradually withdrew it. She still slept quietly, and after a time I left her in charge of the nursetender, with a strict injunction that on no account should she be left for one moment. I had the satisfaction of learning, the following morning, that after I had left she continued in a deep sleep for two hours, when she awoke and attempted to get out of bed, but was easily restrained, and at once fell asleep again, and, with the exception of two short intervals, had slept constantly up to the time of my visit at 9 o'clock A. M. I found her perfectly quiet and rational; her pulse was but 95; she had no headach, and but little thirst; she, however, suffered from pain and griping in the bowels, which were easily relieved by a carminative draught, and from this time she steadily improved, and was soon restored to health. The lochia never reappeared. I have on several occasions tried chloroform in cases of puerperal mania, but never with more than temporary benefit; nor in this instance can we attribute the beneficial

change which took place solely to its administration; but, by giving a large opiate while the patient was in deep sleep, and keeping that state up until the drug had time to produce its effect, the most favourable conditions were obtained for allaying the intense nervous excitement which existed.

The Restoration of Persons apparently Drowned.

In the twenty-first Number of the Life-Boat Journal we introduced this important subject to our readers, in connexion with a new mode of treatment proposed by the eminent physiologist, the late Dr. Marshall Hall.

Again, in our twenty-fifth Number, we enlarged on the subject, and inserted in juxtaposition the old Code of Instructions, so well known as those of the Royal Humane Society of London, and that proposed by Dr. Marshall Hall; the former of which the National Life-Boat Institution had, until then, circulated through the medium of its life-boat stations on the coasts of the United Kingdom.

We then stated that the Committee of Management of the Institution felt deeply impressed with the very great importance of the subject, to which their attention had been drawn by one of their most active honorary secretaries[a]; and, sensible of the great responsibility incurred by promulgating any system of rules of the efficacy of which the slightest doubt could be entertained, that they had determined to bring the subject, so far as possible, before the medical world, and to solicit the opinions of all medical men and medical authorities, with a view to issuing a new Code of Instructions which the institution might, with confidence, circulate at its stations on our coasts.

In pursuance of this resolution, an appeal was at once made through the medical journals, asking for information, and similar appeals were made by letter to all the principal medical associations and hospitals in the United Kingdom, and to a large number of private practitioners, especially in neighbourhoods contiguous to the sea and to inland waters.

Application was also made, through some of the foreign embassies, for the opinions of the chief medical authorities in foreign countries.

These appeals were in general readily and promptly replied to, and the result is, that the institution is in possession of such a mass of valuable information and expression of opinion, on this interesting and important subject as has, probably, never previously been collected.

Possessed of this information, the Committee have felt justified in acting on it, and, after its being carefully considered in detail, and the several opinions collected compared one with another, they

[a] R. V. Gorham, Esq., Surgeon at Aldborough, in Suffolk.

have caused a new Code of Instructions to be printed, which is now being extensively circulated on the coast of the United Kingdom.

We now place these new instructions before our readers, together with a summary of the information received, so far as concerns the numbers of opinions that have been collected respecting the two methods, which is all that our limited space will admit of. From the latter it will be perceived, that the great majority of medical men are in favour of the new method by Marshall Hall; and by comparing the former with Dr. M. Hall's plan, it will be seen that his method has been altogether adopted in principle, and with but slight modification in detail and in wording.

It will be well, however, for the benefit of our non-medical readers, that we should, in the first place, explain the difference in principle between the old method of the Royal Humane Society and the new one of Dr. Marshall Hall. The one great distinction in principle is, that the old method directed all its efforts to the restoration of warmth.and re-circulation of the blood, there being no one part of its rules that had reference to the function of respiration; whilst, on the contrary, Marshall Hall not only insists on restoring respiration, as of vital importance; but he affirms that every attempt to restore and increase circulation of the blood before respiration has been effected is positively deleterious, and must be liable to cause death. In support of his opinion Dr. Marshall Hall quotes the fact so well known to all medical men, that the circulation of the blood generates carbon (termed by the faculty blood poison). That as carbon or charcoal is a product of ordinary combustion, so carbon is produced by that mysterious animal combustion which maintains the heat of the animal body and supports life; but, that remaining in the blood,—that carbon or refuse matter,—would produce asphyxia, and thereby death. That accordingly nature, by the beautiful process of respiration, carries out of the system this carbon or waste matter.

Difference of opinion, we believe, still exists as to the precise time and manner in which this change in or purification of the blood takes place. It will not be necessary here to discuss the same. We may, however, shortly explain that the blood is the medium by which the constant waste of all parts of the body is re-supplied, and its substance and bulk maintained, and by which its heat is supported; that the engine by which this vital fluid is, as by a force-pump, driven through every part of the body is the heart, by the contraction and dilatation of which it is forced through the arteries to every part of the body, whence, at their extremities, it is taken up by the veins and returned to the heart again; that the outgoing stream, the arterial blood, is red in colour, and contains that heat and nourishment which it is its office to impart to the whole system; that the returning stream, the venous blood, is black in colour, deprived of its nutritive property, and impregnated with carbon, which, as above stated, has unfitted it for further use; that it is then handed over to another and separate system of arteries

and veins for its purification, being at once transferred to the pulmonary arteries, which, by their innumerable ramifications, expose it in the lungs to the freshly inspired air, when the carbon, combining with the oxygen of the air, forms carbonic acid gas, which, by each expiration, passes off into the atmosphere, and the blood, thus purified, is carried back to the heart by the pulmonary veins, whence, again red in colour, renovated and re-vivified, if we may use the term, it once more starts on its ceaseless, unwearied round; and thus the wondrous system of life is maintained for its appointed time.

This digression to explain the beautiful connexion between the function of respiration and circulation of the blood, was necessary to convey to those who are not already acquainted with the subject a clear idea of the principle on which Dr. Marshall Hall's theory of restoring life in cases of suspended animation from drowning is founded. As he states, the two functions must act together, being mutually dependent on each other. To restore, therefore, the animal heat and quicken thereby the circulation, without the purifying process of respiration, must produce death. As a rather striking illustration of this truth, he quotes the case of the hybernating animals, which are enabled to exist for a long period without breathing, simply because circulation of the blood is also suspended, and life is at a very low ebb. He quotes also the cases of newly-born infants; and in the cases of still-born infants his method has been most successfully employed. He, therefore, advances as an axiom on the subject, that the greater the amount of vitality the more necessary is the accompaniment of respiration, whilst it is when at its lowest ebb that life may exist, in abeyance, as it were, for the longest period without respiration.

On reviewing the details of the two methods, therefore, the old and new, we find that the former directed the drowned person to be conveyed to the shelter of the nearest dwelling, and then placed in a warm bed, in a warm chamber, and every available means to be then at once taken to restore warmth and promote circulation of the blood, by friction on the skin, hot bricks or bottles, or bladders filled with hot water, &c., applied to various parts of the body, or, in preference to all, when obtainable, immersion in a warm bath. These means were to be persevered in until life was restored, or the case pronounced altogether hopeless. Such was, and we believe is, now the system adopted by the Royal Humane Society of London. It appears, however, that many private practitioners have felt the importance of attempting to promote respiration where suspended, which it has been endeavoured to effect by forcing air into the lungs through a common bellows applied to one nostril. Although, however, instances are recorded of recovery following such treatment, and even that of inflation of the chest by the already vitiated air blown from the mouth of a bystander, yet serious risk was incurred of injuring the delicate tissues of the lungs by the use of such means.

It remained for Dr. Marshall Hall to discover the far closer imitation of natural respiration, which has been already successfully practised in several cases of drowned persons, and in many more instances in the analogous cases of suspended animation in still-born children, which important discovery bids fair to produce a revolution in the treatment of such cases, and to prove an important benefit to mankind.

Having reference to the above-named important principles, Dr. Marshall Hall, then, in the first place, insists that no time be lost; that, instead of removing the body to the nearest house, it should be treated instantly, on the spot, in the open air, by which treatment less time is lost, and a purer air is inhaled than that within a dwelling. In the second place, he requires that the body be placed with the face downwards, in which position the tongue will fall forwards, carrying with it the epiglottis, and so leaving the glottis clear and open for the discharge of any fluids which may have passed into the windpipe, and for the ingress and egress of air to and from the lungs. In the third and last place, he directs that the process of respiration be imitated, by the simple and natural means of changing the posture of the body itself. When placed on the stomach, or with the face downwards, the cavity of the chest is compressed by the weight of the body alone: and Dr. Marshall Hall states that experiments with dead subjects have proved that about twenty cubic inches of air will, in that manner, be exhaled. Also, that by a further steady pressure of the hand on the back, between and below the shoulders, will expel a further quantity of ten cubic inches, or thirty cubic inches in all. That by then placing the body on one side, from the natural elasticity of the framework which encompasses the lungs, a complete expansion of the chest cavity again takes place, and, following a natural law, the outer air once more rushes into, and refills the lungs to the amount of the thirty cubic inches previously expelled. By this truly simple and beautiful operation, an artificial respiration is completely established, the alternate acts of which may be repeated at intervals, the length of which are at the command of the operator. Dr. Hall recommends their being repeated at intervals of four seconds, or fifteen times in a minute: a complete expiration and inspiration thus occupying a period of eight seconds.

Whether this particular rate of alternate movement of the body be the most suitable, or whether it should be the same in all cases, and in all stages of suspended life by drowning, will, no doubt, be shown by the light of further experience.

During the time that the efforts above described are being made to restore the breathing power, Dr. Hall recommends that means be adopted to increase warmth, and restore the circulation of the blood, by friction, drying the body, and clothing it, or by any available means, except the continuous warm bath, which is known to impede breathing. He, however, urges, as of the utmost importance, that these efforts to restore heat, &c., must not go a-head of

the respiratory action, which itself generates heat by the chemical change it produces in the blood.

On perusing the summary of the opinions given by three hundred medical men, and by medical bodies within the United Kingdom, which we now place before our readers, it will be observed that, owing to the short time since its promulgation, only seven have tested the correctness of Dr. Marshall Hall's plan by actual experiments on drowned persons, but that the greater number of twenty-two have done so in the cases of asphyxiated or still-born children. Although the operations have been successful in all the reported cases of both kinds, yet it must be admitted that the proof of experience, especially as regards drowned persons, is as yet but of a limited character. Since, however, the great body of these medical practitioners who have theoretically expressed their approval of Dr. Hall's method have pronounced their opinions in a most emphatic manner, as founded on physiological facts and reasoning, and have stated their intentions to adopt it in future cases; and seeing, from the comparatively small number of persons drowned within reach of the aid of medical men, that a long period would necessarily elapse before any rules founded on long experience could be adopted, we feel assured that the Committee of the National Life-Boat Institution have acted rightly in pronouncing and promulgating rules on this subject for the guidance of uninstructed persons, founded on the opinions thus expressed by so large a number of the members of the distinguished medical profession of this country, backed as those opinions also are by the continental authorities who have kindly favoured the institution with their opinions on the relative merits of the old and new methods.

Referring to the opinions of foreign authorities, it may be stated that although Dr. Marshall Hall is known to them by his writings, and has a European celebrity as physiologist, they do not appear to have heard of his proposed system for restoring drowned or other asphyxiated persons. They have, therefore, only pronounced theoretically on the subject; affirming the correctness in principle of his method, and generally adding that if his manner of restoring respiration by postural action only should be proved by experience to be as effectual as the Doctor anticipated, it would be an invaluable acquisition to medical knowledge.

With reference to the opinions received from the Board of Public Health at Paris, we may observe that, whilst that Board approves of the principles advocated by Dr. Marshall Hall, it states that the necessity of restoring respiration has been for a long time known and acted on by their medical authorities, but their mode of effecting it differed from that of Dr. M. Hall's.

Opinions of medical men and medical bodies in the United Kingdom on the comparative merits of the two methods of restoring drowned persons, viz.—that of the Royal Humane Society and that proposed by Dr. Marshall Hall:—

Total number of replies received (of whom eleven sign as representing medical bodies),	300
Total number of the above which are altogether in favour of Dr. M. Hall's plan,	254
Number in favour of the plan of the Royal Humane Society,	10
Number who recommend the addition of some of the Royal Humane Society's rules to those of Dr. M. Hall,	20
Number whose replies are undecisive,	12
Number who decline to offer an opinion,	4
Number who have successfully practised Dr. M. Hall's plan on drowned persons,	7
Number who have successfully practised Dr. M. Hall's plan on still-born children,—some of them in several instances,	22

NEW DIRECTIONS TO RESTORE THE APPARENTLY DROWNED.

1. Treat the patient instantly, on the spot, in the open air, exposing the face and chest to the breeze, except in severe weather.

To clear the Throat.—2. Place the patient gently, face downwards, with one wrist under the forehead, in which position all fluids will escape by the mouth, and the tongue itself will fall forwards, leaving the entrance into the windpipe free. Assist this operation by wiping and cleansing the mouth. If there be breathing—wait and watch; if not, or if it fail, then—

To excite Respiration.—3. Turn the patient well and instantly on the side, and—

4. Excite the nostrils with snuff, hartshorn, volatile salts, or the throat with a feather, &c., and dash cold water on the face, previously rubbed warm. If there be no success, loose not a moment, but instantly begin—

To imitate Respiration.—5. Replace the patient on the face, raising and supporting the chest well on a folded coat or other article of dress.

6. Turn the body very gently on the side and a little beyond, and then briskly on the face, alternately, repeating these measures deliberately, efficiently, and perseveringly, about fifteen times in the minute, or every four seconds, occasionally varying the side. [By placing the patient on the chest its cavity is compressed by the weight of the body, and expiration takes place; when turned on the side this pressure is removed, and inspiration occurs.]

7. On each occasion that the body is replaced on the face make uniform but efficient pressure, with brisk movement on the back between and below the shoulder-blades or bones, on each side, removing the pressure immediately before turning the body on the side. [The first measure increases the expiration, the second commences inspiration. The result is respiration or natural breathing, and, if not too late, life.]

8. After respiration has been restored, promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, &c., to the pit of the stomach, the armpits, between the thighs, and to the soles of the feet.

To induce Circulation and Warmth.—9. During the whole time do not cease to rub the limbs upwards, with firm grasping pressure and with energy, using handkerchiefs, flannels, &c. [By this measure the blood is propelled along the veins towards the heart.]

10. Let the limbs be thus warmed and dried, and then clothed, the bystanders supplying the requisite garments.

Caution.—1. Send quickly for medical assistance, and for dry clothing.

2. Avoid all rough usage and turning the body on the back.
3. Under no circumstances hold up the body by the feet.
4. Nor roll the body on casks.
5. Nor rub the body with salts or spirits.
6. Nor inject tobacco-smoke or infusion of tobacco.
7. Avoid the continuous warm bath.
8. Be particularly careful to prevent persons crowding around the body.

General Observations.—On the restoration of life a teaspoonful of warm water should be given; and then, if the power of swallowing have returned, small quantities of wine, or brandy and warm water, or coffee. The patient should be kept in bed, and a disposition to sleep encouraged.

The treatment recommended should be persevered in for a considerable time, as it is an erroneous opinion that persons are irrecoverable because life does not soon make its appearance, cases having been successfully treated after persevering several hours.

The leading principles of the above instructions are those of the late Dr. Marshall Hall for the restoration of the apparently dead from drowning.

In conclusion, we may state that the Committee of the National Life-Boat Institution will be gratified to be the vehicle for collecting any information which further experience may develop on this important subject, and they will feel indebted to all medical men and others who may have opportunities to test the new Marshall Hall method, if they will communicate the results of the same to the Institution.—*Journal of the National Life Boat Institution.*

Case of Poisoning with Hachisch. By PROFESSOR K. D. SCHROFF.

I FEEL for many reasons induced to publish the following case of poisoning with hachisch. Some consider *Cannabis Indica*, and all its preparations, to be but little dangerous; and many are inclined to award them a place rather among luxuries than among poisons. But indeed the idea of what entitles a substance to be referred to either the former or the latter category is so uncommonly elastic, that we do not hesitate to class at will a great number of things at one time among luxuries, at another, among poisons. Thus von Bibra, in his excellent work on the Narcotic Aliments, has not

scrupled to adopt arsenic among the number; and according to the interesting researches of Falk on Caffeïn, no toxicologist can henceforth be found fault with if he transfers coffee and tea, and, in short, all parts of vegetables containing caffein, to toxicology, inasmuch as this alkaloid evidently possesses poisonous properties, for it has long been known that very concentrated infusions of tea and coffee are capable of producing phenomena of poisoning. Numerous as are the communications on record in reference to psychical alienations produced by the preparations of hachisch, accurately described cases of intoxication by this drug, to the degree of endangering life, are still to be supplied. I should wish, by the recital of the following case, to spare any who, in the belief that hachisch is scarcely to be looked on as a dangerous remedy, might thoughtlessly give it in large doses, in whatever form it may be imported from the East, the terror and anxiety its employment caused me.

I had already, many years before, in consequence of several experiments made both with the infusion of the herb Cannabis Indica, brought from the East, and with its different preparations, especially with various kinds of hachisch, and with the alcoholic extract of the plant, as also with both the *Cannabis Indica* and *Cannabis sativa* cultivated in this country, been convinced from most of the trials of this remedy that, on the one hand, not only the different preparations and the difference of locality where the plant had been cultivated, but also the mode of preservation, and especially the difference in age of one and the same part of the plant, and the time of preservation of one and the same preparation, essentially influenced its activity; and that, on the other hand, the individuality of the person experimented on played a very important part in determining the effects of the remedy. If the latter proposition be more or less true of all substances acting on the nervous system, but especially on the brain, and is, therefore, particularly to be observed of narcotics; there is among the last-named substances, according to my experiments with them—most of which were tried on the same individuals—no other substance of which it is so true as of *Cannabis Indica*, and all its derivatives; a fact I have already pointed out in my Lehrbuch der Pharmakologie, pp. 491–95.

In the autumn of 1856 a consignment of various kinds of hachisch, addressed from Bucharest by the apothecary there, Dr. Steege, to Dr. G. Martius, reached Vienna; and from the latter gentleman I obtained permission to take as much of each variety as I should find necessary for my objects, of which permission I moderately availed myself. I determined to subject the specimens to physiological experiment, inasmuch as they differed in their external appearance from the sorts of hachisch I already possessed, and which I had previously tried. Among them was a preparation bearing the name of "Birmingi;" while on the label of the glass containing it was marked "macht Keif (that is, produces laughter), 10 gran." From this superscription I could infer nothing else

than that, in the East, they were accustomed to take the preparation in ten-grain doses, and that this quantity threw those who took it into an agreeable frame of mind, and produced laughter.

The preparation belongs to the solid varieties of hachisch; is in the form of tablets, which are very hard and difficult to break; externally it is coloured almost black, and is smooth; on section, or on the under surface, it presents in the centre a dirty greenish-gray colour; it has an uneven fracture; its smell is very slight, it is only from the fresh surface of fracture that an odour calling to mind that of the herb of the *Cannabis Indica* is obtained; the taste is neither bitter nor aromatic, but rather insipid; on prolonged mastication the very tough mass becomes gradually pappy, and eventually dissolves in the saliva, leaving a crumbling solid substance; irritation of the throat also ensues when the drug is chewed for a long time. This species is, therefore, essentially different from that imported from Egypt, with which I had instituted several experiments, and which I have more accurately described in my "Pharmakognosie," page 130; but it differs still more from the soft varieties of the drug.

Of this "Birmingi," Dr. Heinrich—who had fully tried most narcotics, and in my former experiments on *Cannabis Indica* had taken several preparations of this drug without manifesting any particular susceptibility of them, but rather always served as a check if more violent effects had occurred from narcotics in other individuals, when a steady excitability constantly manifested itself in him—took ten grains at half-past 5 in the afternoon of the 6th of May, in the present year. He chewed this quantity for about an hour, during which it gradually dissolved and was swallowed; only the insoluble solid residuum, amounting to about two grains, was spit out. Irritation of the throat, eructation, and slight nausea ensued. The attempt to smoke a cigar in the open air had to be given up, on account of dryness and roughness in the throat. Dr. Heinrich took a walk in the town, and inspected the print-shops and play-bills without perceiving any change in himself. At the end of an hour and a half, that is, about 7 o'clock, he met an acquaintance, to whom he talked all kinds of nonsensical trash, and made the most foolish comparisons; from this, everything he looked at seemed to him ridiculous. This condition of excitement—in which his face and eyes got redder and redder, the subjective heat of the body considerably increased, and the feeling of facility of motion became constantly more distinct—lasted about twenty minutes. Suddenly a great degree of sadness came over him; everything was too narrow for him; he acquired a disturbed appearance, became pale; his sadness increased to a feeling of anxiety, accompanied by the sensation as if his blood was flowing in a boiling state to his head; the feeling as if his body was raised aloft, and as if he was about to fly up, was particularly characteristic. With the oppression of the chest was combined a sensation of compression and tightness in the præcordial region. His anxiety and weakness

overcame him to such a degree that he was obliged to collect all the power of his will, and his companion had to seize him firmly under the arm, in order to bring him on, which was done in all haste, as he feared a new attack, and wished, if possible, first to reach a place where he could be taken care of; but in the course of three minutes, while he was still walking, the attack set in with increased violence. It was only with great difficulty he reached the Pharmacological Institute; here he immediately drank two pints of cold water, and washed his head, neck, and arms with fresh water, on which he became somewhat better. The improvement, however, lasted only about five minutes. He sat down on a chair, and unfortunately (as he observes in his Report) felt his pulse, which he found to be very small and slow, with very long intervals. He was no longer in a state to take out his watch to ascertain more exactly the frequency of his pulse, for the feeling of anxiety came over him again, and with it he traced the premonitory symptoms of a new and violent attack. He was brought into the adjoining chamber, stripped himself partly of his clothes, and gave over his things, directing what was to be done with them after his death, for he was firmly convinced that his last hour had struck, and continually cried out, "I am dying; I shall soon be undergoing dissection in the dead-room." The new attack was more violent than the former were so that the patient retained only an imperfect degree of consciousness, and at the height of the paroxysm even this disappeared. After the fit, too, consciousness returned but imperfectly; only so much remained in his recollection that the images which rose within him constantly increased in ghastliness until they gave way to the unconscious state, and that gradually, with returning consciousness, less formidable figures appeared in their stead. Subsequently he stated that it appeared to him as if he were transported from the level surface to a hill, thence to a steep precipice, thence to a bare rock, and lastly to the ridge of a hill, with an immense abyss before him. From this time he could no longer control the current of ideas following one another with impetuous haste, and he could not avoid speaking uninterruptedly until a fresh attack came on, which quite deprived him of consciousness for some minutes.

At this time (a quarter-past 8) I was called to Dr. Heinrich, and did not leave him until all danger was over. Before I report my observations, I shall let him describe his own case:—

"The flow of my ideas had now free course, and notwithstanding my great loquacity, I could utter only a few words of what I imagined. All my thoughts and deeds from my childhood came into my mind. I believed that I had, although imperfectly, spoken out my whole character. The fear of dying no longer indeed laid hold on me to the same degree as before; yet I remember to have said that they should leave me, for what and as I then was, I should be always. The senses of sight and hearing were unimpaired, for when I opened my eyes I knew all those who were standing about me, and equally recognised them by their voices when my eyes were closed;

and I answered what they said in some suitable words, without connecting the latter, as my speech was soon subordinated to my fertile imagination. I cannot recollect the moment when Professors Brücke and Schroff came to me; neither did I know that sinapisms were applied to me, and that my feet were rubbed with brushes. It was not until the second day that I perceived this from the sore spots on the back of my left foot: the sensibility of my skin was much blunted. Nor can I recollect when the severe rigor occurred which was observed in me after the last most violent attack. The urine I could not retain; it passed involuntarily from me. Towards 10 o'clock—that is, four and a half hours after the seizure—the storm was somewhat allayed; I obtained the control over my imagination, ceased to speak incessantly, and traced some pain in the præcordial region, in the place where irritants had been applied. At this time *café noir*, with lemonade, was brought; which I remember, though I cannot state the time when it took place. The flow of my ideas was too rapid, and I therefore thought that it was already very late. The time given above I state only according to what I was afterwards told; for I am not in a position to form an opinion as to the time and duration of the paroxysms. During the night I drank a great deal of lemonade, and another cup of *café noir;* nevertheless, sleep fled from me, for my imagination was constantly at work. I was obliged to pass water several times, which at first took place not without difficulty. Next morning I dressed, and had myself brought home, but could not set to my usual daily work, because, notwithstanding the greatest effort, I could not collect my scattered thoughts; and I also felt corporeally too weak. I was, therefore, obliged to take to bed, where I remained until the morning of the third day. During this time I drank four pints of lemonade, and took soup only twice, as I had no appetite. On the third day I had myself led about, supported by a second person, but was still rather confused and giddy. This day, also, for want of appetite, I ate but little, but still drank lemonade. I passed urine without difficulty; perspiration did not take place; the bowels had not acted for three days. During the second and third nights my sleep was tranquil. On the fourth day I felt well again; regained appetite; my strength increased; my appearance became less unsettled. Nevertheless, walking about for half-an-hour tired me very much. The depression which came on after the excitement gave way only gradually. On account of constipation I had, on the third day, taken a Seidlitz powder; but except the discharge of flatus this produced, it had no effect; it was not until I had, on the fourth day, swallowed two Seidlitz powders, that several motions took place."

As has been stated above, I saw the patient at a quarter-past eight. He recognised me immediately, as well as all those about him whom he saw and heard. I found him lying in bed; his face red, as in health; the cheeks rather hollow; the pupils moderately dilated, but the iris sensitive to the stimulus of light; the eye-ball

moved freely; the lustre of the eyes was unchanged; the conjunctiva of the globe was somewhat congested; the forehead was cool; even after the removal of the cold applications which had been used, the forehead and head were only moderately warm, never hot. The carotid and temporal arteries pulsated feebly and more slowly than in the normal state; the pulsation of the heart was very weak, and sometimes scarcely perceptible; the pulse at the wrist often stopped for a minute and more, and when it returned it was uncommonly weak, and only perceptible when carefully sought for; subsequently it became more distinct (at intervals of from ten to fifteen minutes) and more frequent, and rose to 78, which, for the patient, whose pulse in its normal condition was from 58 to 60, was tolerably quick. These variations in the pulse, with which the action of the heart and of the carotid and temporal arteries corresponded, were repeated frequently within an hour; the respiration was low; in other respects it was regular. The abdomen was somewhat tympanitic, otherwise it, as well as all other parts of the body, was free from pain; the extremities, both upper and lower, were cold, sometimes tremulous; they were movable in every direction, and were obedient to the influence of the will; the skin was insensible to stimulants, as sinapisms and brushes. The patient could sit up, and drank without difficulty what was offered to him. On my asking him if he did not wish to pass water, he said to me softly, "The urine passes in the bed." All the organs of sense discharged their functions normally, except that the sensitive power of the skin was blunted.

When the patient perceived and recognised me, he manifested joy, it is true; but the idea that he must die, and soon be dissected, predominated long, and he spoke only of it, and took leave of those present. By continued conversation, and the introduction of harmless jokes, we succeeded, however, in drawing him from this idea, and leading him into conversation, when he very soon became cheerful, even joked about himself and others, talked incessantly, communicating the most secret thoughts of his heart, and could not refrain from expressing what he thought of others. Only occasionally did the current of ideas which he could not control overcome him to such an extent that he lost consciousness, so far as not to mind anything about him, not to answer questions or remarks addressed to him, losing himself in a disordered train of thought. However, this state lasted only some minutes, and the power of observing and rightly estimating external impressions again returned. The notion that he must die came back, however, sometimes, and always bore such an intimate relation to the sinking and disappearance of the pulse, that from the commencement of the latter phenomenon, I could with certainty reckon on the invasion of the thoughts of death, and, *vice versa*, from the manifestation of the latter idea, I could anticipate the fall of the pulse. It seemed in the current of uninterrupted speaking, that the mass of ideas and images pressing on one another in the most

rapid succession was much too great to admit of the possibility of their being clothed in words. Out of the chaos of ideas the notion often rose that our condition shall be eternal. He was also much occupied with the thought that he knew not whether he existed, or whether man in general existed, or for what purpose he existed. He acknowledged that it was impossible for him to keep anything secret, and stated that he could, therefore, not avoid exhibiting his character as it really was.

When the servant rushed breathless into my room, and summoned me to Dr. Heinrich, who, he said, was dying, my first idea was that other narcotics or acrid poisons besides *Cannabis Indica* must be contained in the Birmingi to have produced such violent indications of poisoning; for it did not appear to me to be probable that Indian hemp should, in the dose the patient had got, give rise to such severe symptoms. My mind was, therefore, very much eased to find, as I at once inferred on investigating the patient's state, that neither any other narcotic nor acrid poison was in operation; for neither opium nor any of its active constituents could be contained in the preparation, as the symptoms of opium-poisoning, such as they must have manifested themselves with this enormous depression of the action of the heart and vascular system, in deep coma, with stertorous and slow respiration, were absent. Nor could belladonna, stramonium, or hyoscyamus have been mixed with the Birmingi, as the essential phenomena belonging to these three narcotics—enormous dilatation of the pupil, even on exposure to a very dazzling light, unusual dryness of the organs of deglutition, hoarseness, raging delirium, or coma, the peculiar character of the pulse indicative of the ingestion of those narcotics—were wanting. Still less was there reason to suspect that tobacco, hemlock, digitalis, aconite, or cantharides—which, it is said, are sometimes added to hachisch to excite the sexual organs—had been taken, as the symptoms characteristic of these drugs were absent. For though individual phenomena, as the extremely depressed action of the heart and vessels which are among the effects of the last-named narcotics, existed, yet the other symptoms were not observed; and the symptom which is common to both was so far distinguished, as digitalis and aconite produce a constant retardation of the pulse, lasting several hours, with occasional intermission of the beat, while here this condition alternated with increased frequency; not to mention the so characteristic exaltation of the cerebral functions, which latter, in cases of poisoning with digitalis and aconite, either remain quite unaltered, or manifest only extremely inconsiderable alienations. The absence of all phenomena appertaining to inflammation of the urinary organs was conclusive against the idea of poisoning with cantharides. Nothing, therefore, remained but to attribute the entire group of symptoms to the administration of hachisch, consisting exclusively of Indian hemp.

The characteristic feature of the above case of poisoning with hachisch consists in the extreme and persistent depression of the

action of the heart and entire vascular system; and in the simultaneous lowering of the feeling of life, and the consequent fear of death, after the previous stage of excitement had lasted but a short time. The stage of depression alluded to is also characterized, however, by the absence of tendency to sleep, and by its long duration, in which this case differs from all the experiments I had made with Indian hemp and its preparations. In this respect this case contrasts directly with that I have communicated in my "Lehrbuch der Pharmakologie," where a concentrated infusion of *Cannabis Indica* had given rise to an extremely acute and uncommonly intense attack of insanity, with destructiveness; which, however, quickly passed off, without leaving behind it any great depression; for even on the next day the person experimented on having had a good night's sleep felt perfectly well; while in Dr. Heinrich's case, the first night was wholly sleepless, and very considerable muscular debility, with determination to the head, continued until the third day. But it agrees with all our experiments and observations in this, that no trace of convulsion was manifested, for the slight degree of tremor which was present cannot be regarded as convulsion, inasmuch as the free influence of the will continued undisturbed, even in the limbs affected with tremor. However, convulsions occur very rarely, though there is no lack of observers who make mention of such, and even of cataleptic fits, after the use of hachisch. The above two cases, therefore, illustrate, in a remarkable degree, these two stages of intoxication—the stage of exaltation predominating in the one, and that of depression in the other.

Further, the case above communicated affords a fresh support to the view that Indian hemp, and the preparations derived from it, in general far exceed every other of the agents hitherto known which are more nearly connected with the cerebral functions in their immediate action on the imagination. With no other phrenic agent does the mental self-consciousness, the psychical coenæsthesia, the spiritual self-contemplation, come forward so freely as with this; with none does the current of the inner ideal world break forth so powerfully and impetuously as here, without the possibility of attending to external excitement, and the corresponding reaction being removed. In a person intoxicated with alcohol, opium, &c., there is, in the stage of exaltation, an increase of the bodily coenæsthesia; but only exceptionally, and for a very short time, does this amount to internal contemplation, and it very soon passes completely into the stage of depression. With Indian hemp, the clear, reflective insight, the self-contemplation, occurs as a persistent, essential effect, which is even still maintained when, with respect to the body, activity in all irritable forms is much diminished. And thus is explained the very great variety which exists in the psychical phenomena, according to the difference in the peculiarity, in the special psychical character, in the degree of spiritual development and the occasional disposition of the mind and humour of the individual; as well as, on the other hand, according to the

degree of material change produced by the poison. Hence the eastern Mahometan, who yields himself wholly to the sensual enjoyment of love, passes into the most voluptuous fancies; while the physician and psychologist, inclined to reflection on his bodily and mental existence and action, more closely examines and dissects his corporeal and mental organism.

The same variety of action, thus manifested in the physiological, is also specially exhibited in the pathological condition. Thus, I have seen patients take from one to ten, or, in one case, even so much as thirty grains of the alcoholic extract of *Cannabis Indica* in the course of an evening and night, sometimes within a few hours, without producing any particular symptoms, except some determination to the head; even the so much wished-for sleep, on account of which the remedy was taken, was not obtained;—while, in other cases, one grain of the same preparation, from the same source, produced violent symptoms bordering on poisoning—delirium, very rapid pulse, extreme restlessness, and, subsequently, considerable depression. I must, therefore, in conclusion, repeat the opinion I expressed at the commencement of this paper—in support of which the Members of the Society present, to whom I orally related the above described case, quoted numerous proofs from their practice—that Indian hemp, and all its preparations, exhibit the greatest variety in the degree and mode of action, according to the difference of individuality, both in the healthy and diseased condition; that they are, therefore, to be classed among uncertain remedies; and that the physician must, in every instance, use them with great caution.—*Wochenblatt der Zeitschrift der kaiserl. königl. Gesellschaft der Aerzte zu Wien*, October, 1857, p. 641.

Note on the Physiological Fatty Liver. By Dr. W. BERLIN.

KÖLLIKER has recently made a communication in the "Verhandlungen d. phys.-med. Gesellschaft zu Würzburg," Bd. vii., p. 174, 1856, on the occurrence of a fatty liver in sucking animals and children, which is said to be normal. Though the pathological fatty liver is often combined with increase of volume and other phenomena, I have nothing against calling the condition observed by Kölliker physiological fatty liver, provided that by the term we understand nothing more than what we actually see, an abundant amount of fat in the hepatic cells.

I had an opportunity of repeating, and, I may add, of confirming, Kölliker's observations.

A young Cervus aristoteles recently died in the Zoological Garden twenty-four hours after birth, during which time it had copiously sucked.

I had the opportunity of examining its liver, and even externally saw in different situations more or less bright whitish-yellow spots, which foreshowed what we should find. The hepatic cells were abundantly filled with fine granules and larger drops.

But this observation was not new to me, neither were those communicated by Kölliker. In fact, I had in the summer of 1851 seen this physiological fatty liver in a child.

Dr. Lehmann was so good as to invite me at that time to the dissection of the bodies of children, which had died in his clinique, and we met, in examining a liver, so beautiful a specimen of loading of the hepatic cells with fat, that their origin was quite evident. Thus we repeatedly found forms closely resembling those of milk, so that, in the enthusiasm of the moment, I did not hesitate to cry out: "See, there is milk in the liver." Although this expression may have been rather strong, yet there is no doubt that with the phenomenon we at the same time recognised its cause. The history of the case and the appearances on dissection confirmed our supposition in every respect. I regret that I took no notes of this case, and can, therefore, not state any further particulars about it.

During the summer and autumn of 1856 I had subsequently many opportunities of dissecting the bodies of children with Dr. Lehmann, but without again finding such appearances. This admits of an easy explanation if we recollect that most children which die in the Lying-in Hospital have for some time been sickly, and have wholly or in part refused milk diet, and that in general their digestion and absorption have been deranged.

Kölliker appends to his observations the question, how the fat reaches the liver, whether directly through the blood or by means of the lacteals. He considers the latter to be the more probable mode. His reasons for holding this view are, however, not conclusive, and so long as the opposite is not proved, I should hold the former to be not improbable.[a] I can, however, not speak more fully on this subject, nor on the interpretation of this deposition of fat in the liver, of which Kölliker treats, as I can contribute neither fresh observations nor experiments bearing on the point. This alone I would assert, that the fat must either be employed in the formation of bile, or be removed by the hepatic veins from the liver. In any case experiments would be instructive.—*Archiv für die Holländischen Beiträge zur Natur und Heilkunde*, Band i., Heft 1 und 2, p. 100.

[a] We must, however, remember that the lacteals do not act before birth or during intra-uterine life; that, consequently, absorption does not take place in the intestinal canal, at least through the lacteals. A comparison of the lymphatic glands in the mesentery before birth, with those of children who have lived sometime, will be sufficient to show this. But there are still other reasons which I cannot here discuss. Is there, however, anything improbable in assuming that the first milk is in great part taken up by the blood-vessels? And if this occurs, may it not also happen later? An examination of the absorption in the intestinal canal of young sucking animals and children of different ages, would, however, solve this question, which so long awaits a satisfactory answer.

On Acute Fatty Metamorphosis of the Muscular Substance of the Heart in Pericarditis. By RUD. VIRCHOW.

STOKES, in his monograph on Diseases of the Heart and the Aorta (Lindwurm's translation, Würzburg, 1855, p. 246), has devoted a special chapter to the subject of weakness of the heart in pericarditis, and in connexion with it has particularly discussed the question, how far this weakness depends on a contemporary myocarditis, as it is sometimes observed. However, he leaves the matter undecided. Rokitansky (Pathol. Anat., Wien, 1856, bd. ii., p. 234) describes only changes of the heart in pericarditic effusions of long standing. The same is the case with Bamberger (Lehrbuch der Krankheiten des Herzens, Wien, 1857, p. 109).

My attention was particularly drawn to this subject by a case of hemorrhagic pericarditis, which had during life, in consequence of its extremely unfavourable course, most anxiously occupied me. On the 12th of February, 1857, a man aged twenty was admitted into my division in the Charité, who had for five days suffered from violent acute articular rheumatism (affecting both knees, the left foot, both hands, and both shoulder joints), and who, at the time of his admission, presented an unusually quick pulse, profuse perspirations, and great oppression. Notwithstanding repeated examination of the heart, it was not until the second day after his admission that I discovered frottement, while at the same time a peculiar change had taken place in the pulse, the tension of the latter being very much diminished, and a very slight after-stroke following with great rapidity every third or sixth pulsation. From that time the uneasiness of the pale and suffering patient by night and day increased: attacks of violent palpitation of the heart with great oppression supervened; the pulse became weaker and more irregular, the urine contained albumen, finally delirium came on, and the sufferer died in a condition of extreme dyspnœa, which was during the last few days increased by a capillary bronchitis. The entire course of the disease, which occurred in a hitherto apparently healthy man, amounted to seventeen days, the duration of the pericarditis to ten.

The autopsy confirmed my suspicion that with the pericarditis an essential disease of the muscular substance of the heart had taken place in a, so far as I have been able to find, hitherto undescribed mode. The pericardium contained a thin, blood-red fluid to the amount of 16 cubic centimetres (about $9\frac{1}{4}$ fluid ounces), in which, however, the microscope no longer showed any blood corpuscles, but rather indicated the occurrence of cadaveric changes in the presence of long vibriones, the development of ammonia, and, perhaps, also the small amount of leucin. The surface of the pericardium was very rough from thick layers of fibrin, which could not be separated from its wall without violence. The fleshy substance of the heart in general appeared flaccid, pale, and somewhat spotted, but on more accurate examination it was seen that under

the whole extent of the pericardium the outer layer of the muscular structure had assumed a pale-yellow opaque appearance. The thickness of this layer amounted to from one to one and a half or two lines, and it was particularly distinct when a thin section treated with acetic acid was pressed between two glasses, and observed with transmitted light. Microscopic examination showed that within this layer all the primary fasciculi had undergone such complete fatty metamorphosis that not the least trace of the internal structure could any longer be recognised. As we went more deeply, this metamorphosis gradually diminished, but there was no part of the fleshy structure of the heart which was wholly free from fat granules in the interior of the primitive bundles. Towards the surface increasing layers of connective tissue were met, which passed into the thickened pericardium and the apparently fibrinous layers, and which were full of numberless, densely compressed nuclear and cell masses contained in compartments. I may add, that corresponding to slight valvular sounds heard during life, slight recent morbid conditions of the edges of the valves were everywhere found.

Soon after, the body of a man was brought for dissection, who had died quite suddenly at another station, and in whom the autopsy revealed a purulent pericarditis not suspected during life. In this case the outer stratum of the muscular substance exhibited the same change. On the other hand, this was wanting, or was very little advanced, in many other cases, whether slighter or similar, in which the pericaditis was only a complication of other more severe affections. It seems to me, therefore, that there is scarcely any doubt that this peculiar fatty metamorphosis penetrating from the periphery inwards is caused by the pericarditis, and that it is precisely this which produces the weakness and paralysis of the muscular structure of the heart, which menace the patients with the greatest danger to life. It is directly opposed in situation to that (chronic) fatty metamorphosis, which is met with in dilatation of the cavities of the heart, and is also accompanied by weakness; this begins, in the first place, in the endocardium and usually more in spots, being distinguished by this latter circumstance from the more uniform fatty loss of colour of the inner fleshy layers, such as occurs in old people.

It is not my intention on the present occasion, to mention all the possible varieties of fatty metamorphosis of the heart. I have designedly confined myself to those less known forms of partial but extensive metamorphosis which belong to the inner and outer periphery of the organ. Of these, those adjoining the endocardium in general belong to chronic processes, while those described as under the pericardium are manifestly of acute inflammatory origin. This is the less doubtful, as myocarditis, both of the rheumatic and of the suppurating form, attends fatty metamorphosis of the muscular structure of the heart, as I already stated on a former occasion. —(Archiv. iv., p. 270, 273.) This is most beautifully seen in the

embolic softening (Gesammelte Abhandl., p. 715), where, in general, the layer adjoining the obstructed artery exhibits a granular softening (decay, detritus), while the next and more external manifests the most beautiful fatty metamorphosis. That the inflammatory irritation is capable of propagating itself from the pericardium to the endocardium, Desclaux has experimentally shown (Gesammelte Abhandl., p. 527); and that it is exactly the hemorrhagic pericarditis which, with peculiar ease, gives rise to such complications, is shown, in addition to the extremely instructive case communicated by me (Ges. Abh., p. 410; Archiv i., p. 316), and by M. Salter's observation (Lond. Med. Gaz., Jan. 1839,) quoted by Hasse (Pathol. Anat., i. p. 153), and in which purulent softening of the muscular substance, especially of the left ventricle, and probably inflammatory depositions of fibrin, are said to have been found within the cavities of the heart.

It appears to me to be a particularly important question for further observation, under what circumstances pericarditis is complicated with a morbid condition of the deeper structures of the heart. Experience shows that this happens particularly in cases in which the heart's action has very early become unusually rapid. It is precisely those cases of acute articular rheumatism in which the "fever" has early attained a great height, that offer the greatest danger. Should we not infer that it is the increased action of the heart which disposes it to disease, and that the same obtains for the muscular structure, which I have endeavoured to point out in reference to the endocardium (Ges. Abh., pp. 505–509). Experience further shows, that the treatment which most quickly allays the increased action of the heart, and produces the greatest amount of muscular quiet, is that which has the greatest influence on the result. Everything, therefore, indicates that the mechanical element, both etiologically and with reference to prognosis, occupies the first rank, but it would be extremely desirable that more accurate observations should be directed to ascertain to what degree the more exact analysis of the phenomena may decide the practice of the physician. For, in such cases it is of vital importance quickly to adopt the really curative mode of treatment, as delay must always be attended with an increase of the organic disturbance, and paralysis of the heart may occur on sudden excitement, when we have succeeded in diminishing the frequency of the pulse.—*Virchow's Archiv*, New Series, Bd. iii., Heft 2 and 3, March 1858, p. 266.

On the Employment of Chloroform in the Examination of Flour mixed with Mineral Substances. By M. J.-L. LASSAIGNE.

THE uses of chloroform in isolating some principles soluble in it, has already been pointed out in several cases of proximate analysis of certain parts of vegetables. In like manner this product has been employed in certain inorganic or mineral analyses.

Since the publication of these facts, of which chemists and pharmaciens have been able to make practical application, I have been informed by a distinguished pharmacien of Charleville, M. Cailletet, formerly intern in the Paris hospitals, that the use of chloroform has been extended to the analysis of the farinas of the Cerealia, or of other varieties of flour suspected of being mixed with mineral substances.

On a journey which I had occasion to make to Charleville, in the month of January last, M. Cailletet, with whom I was associated in a judicial investigation, communicated to me his results, and kindly exhibited to me this action of chloroform on pure farinas, and on farinas mixed with mineral substances. A great number of the latter are naturally not only insoluble in this fluid, but they possess generally a greater density than it does; it is therefore on this property that M. Cailletet has based the equally simple and ingenious method which he has employed to discover even the ten-thousandth part of mineral matter mixed with a specimen of flour. The density of the farinas being much less than that of chloroform, it is evident that they will be easily separated from the matters heavier than this fluid interposed between the particles of farinas.

This operation is, in some measure, a mechanical proceeding, which causes all the farinaceous molecules to rise above the chloroform, while the foreign mineral matters are deposited at the bottom of the fluid which occupies the space intermediate between the former and the latter.

A tube of glass or crystal, about an inch in diameter, and six or eight inches long, which is closed hermetically, in order to mix the chloroform thoroughly with the farina submitted to experiment, is conveniently adapted to this operation.

One or two drachms of the suspected farina are introduced into the test tube; chloroform is poured over the farina so as nearly to fill the tube; the latter is closed, and shaken for some time.

After a repose of longer or shorter continuance, according to the temperature of the place in which the experiment is carried on, the tube being placed in a vertical position, the separation is effected: the lighter farina occupies the upper part, and below the layer of chloroform at the bottom of the tube are collected the foreign matters which were mixed with the flour.

It is by means of this simple plan that M. Cailletet has been able to isolate directly either very small quantities of arsenious acid in powder mixed with flour, or alum in fine powder, or any other

mineral substance. The sand or debris of the millstone, which might accidentally be mixed with the flour, would thus be isolated without the necessity of having recourse to the incineration of the flour itself, as is practised in the examination of farinaceous matters.

The ulterior examination of the matters separated from farina by chloroform is then very simple : the chloroform is decanted to collect the deposit formed in it; the latter is dried on tissue paper, and nothing remains but to investigate its physical and chemical properties according to the methods employed in laboratories, and which are daily employed by chemists.

This new method, for which science is indebted to M. Cailletet, will doubtless find more than one application in scientific researches, and perhaps in the industrial arts.—*Annales d'Hygiène publique et de Médecine légale*, 1858, p. 199.

Case of Absence of the Left Kidney. By PROFESSOR FÖRSTER.

THE malformation in question was found in the body of a boy still-born at the seventh or eighth month, brought to me from the Lying-in Hospital on the 18th of June, 1857, which exhibited no other anatomical abnormity. The left kidney, with the ureter belonging to it, was entirely absent; the place where the kidney should have lain was occupied exclusively by the intestine, the left suprarenal capsule was in its proper position, and exhibited no change, except that it was larger than the right. The right kidney occupied its normal situation, and appeared rather larger than usual, the calyx and pelvis being somewhat enlarged, in other respects its structure was exactly that of a single kidney. Nor did any trace of the fusion of two kidneys exist; the right ureter was greatly enlarged, ran in a winding course behind the lower extremity of the colon, which was filled with meconium, and opened on the left side into the bladder, exactly in the place where, in the normal condition, the left ureter usually comes down; the caliber of the ureter at this point was very narrow, and would admit of the introduction of only very fine probes; by this circumstance, but still more by the pressure which the colon must have exercised on the ureter, the dilatation of the latter was accounted for. The urinary bladder was considerably distended with urine, which, on pressing the bladder, very readily flowed from the normal urethra; where the right ureter should normally have entered the bladder, there was no trace of it. The testicles still lay within the abdominal cavity, but were very near the entrance into the inguinal canal.

Absence of one kidney, and of the ureter belonging to it, is a malformation frequently observed, but the remarkable course of the right ureter to the left side, and its opening into the left half of the bladder, is one of the greatest rarities. To explain this latter malformation, we must assume that the portion of the ureter, which lay on the left side, originally belonged to the left ureter, so that, con-

sequently, the upper half of the left, and the lower half of the right ureter were deficient, while the halves which were formed united to constitute one ureter, half belonging to each side. If this explanation be correct, the malformation must have taken place at a very early period of the development of the ureters, at a time in which both ureters consisted only of rows of cells, lying parallel to one another; for, in the period immediately following, the ureters are mutually too remote to admit of the hypothetic fusion taking place. Possibly there is a time at which the first foundation of both ureters consists of a single row of cells, which subsequently divides by a separation of the cells in a certain direction into two rows; in that case the occurrence can be explained by supposing that after this separation the development of the left superior and of the right inferior row of cells was arrested, and so but a single series remained. —*Virchow's Archiv*, March, 1858, p. 275.

On the Black Discoloration of the Tissues in the Human Body after the Use of Nitrate of Silver. By J. VAN GEUNS.

EVEN Paulus Ægineta and Avicenna employed silver as a medicine and in diseases of the head. In the teaching of the *Signatura rerum*, belief in the efficacy of silver in cerebral diseases rested on the silvery lustre of the moon, as the moon and the head were in astrology connected with one another. At the end of the last century silver was very generally employed as a remedy, and principally for the cure of epilepsy. In many cases which resulted favourably a coloration of the skin was observed.

Swediaur seems to have been the first to take particular notice of this fact. An ecclesiastic, who had for some months used nitrate of silver, at last acquired a completely black skin[a].

Similar observations were published by Albers, Reimar, Rudolphi, Schleiden, and Chaufepié, and have been mentioned by Rayer in his "Maladies de la Peau."

The coloration occurs first on the nails of the hands. Falck makes it appear first on the lunula of the nail, as well as on the upper extremities and the face.

It extends subsequently to the conjunctiva, the lips, the gums, the cavity of the mouth, and the palate. Wedemeyer found all the internal organs coloured of a dark black; others, too, mention this more general diffusion of the deposition of silver. Silver has also been found in the urine of epileptic patients who have been treated with nitrate of silver.

No satisfactory investigation has as yet been instituted as to the nature of the coloration attending the use of silver, and what has been written on the subject consists mostly of hypotheses, accord-

[a] Médecine Eclairée par les Sciences Physiques, p. 342.

ing to which silver had been deposited in substance or in combination.

Rokitansky expressly says on this point, that our knowledge of the proper seat of the coloration is very deficient. Falck, on the contrary, believes that no doubt can exist as to the deposition of silver in the dark pigment of the skin in those who have used nitrate of silver internally. He quotes on this occasion a communication of Brandes, who states that he found oxide of silver in the skin of a coloured man. I will add, that he says he found it also in the bones as well as in other soft parts (Quarterly Journal of Science, 1830).

Delioux has given us most information on this subject. He believes that the colour of the skin is not caused by chloride of silver, and for these reasons:—

1. On account of the dark colour.

2. On account of the coloration of the parts which are not exposed to the light.

3. Because the reduction to chloride of silver by organic matters has not been fully proved; so that we cannot assign to the latter in this respect an equal power with light.

4. Because the experiments with albuminates are at variance with such a power.

He therefore assumes that finely divided silver is deposited in the skin, about in the same manner as the black spots by reduction arise on the skin after touching it with *lapis infernalis.*

For this view he adduces the following reasons:—

1. The occurrence of a precipitate of finely divided silver, when the serum of the blood is mixed with nitrate of silver.

2. The coloration of skin which has lain for some time in a solution of nitrate or chloride of silver.

Krahmer, who has published a remarkable work on silver as a medicine, believes that the coloration is caused by an albuminate of silver. Orfila gave dogs three or four scruples of nitrate of silver in six ounces of water, and killed them in four or five hours afterwards. He then found from three-quarters of a grain to a grain in the liver, the spleen, the kidneys, and the coats of the stomach.

The tinging of the skin and internal organs with a slate colour after the use of nitrate of silver is, therefore, nothing new. But the question as to the cause of this coloration we cannot consider to be satisfactorily answered; accurate experiments are still required to this end. On this account I thought that I ought not to withhold some investigations I have instituted on this subject. A patient who died some months ago in the city hospital, and who presented the colour in question after the use of nitrate of silver, afforded the immediate opportunity for these experiments.

The patient was under the care of my colleague Suringar. To the kindness of the latter I am indebted for the opportunity of communicating some particulars in reference to this patient.

I regret very much that I was unable to be present at the post-mortem examination, so that only some parts which were removed from the body served as the materials for my investigations.

The following is a brief report of the case during life. The patient was at the time of his admission thirty-five years of age. From his sixth year he suffered from epilepsy, as he believed, in consequence of suppressed tinea favosa. When he was fourteen years old nitrate of silver was given him according to Löbestein's formula (10 grains in 100 pills). He took five or six pills daily. At the end of six months the epileptic attacks ceased. On account of a threatening of a relapse, however, he took this preparation until he attained his nineteenth year, although not quite regularly; after this time, consequently for sixteen years before his death, he had taken no silver. He was admitted into the hospital in the last stage of pulmonary phthisis, and remained there four weeks until his death.

The post-mortem examination took place thirty-six hours after death. The entire body was very much emaciated. The general colour was bluish, especially on the face, the conjunctiva, and the hands. In the falciform process of the dura mater was a hard bony plate, presenting the regular osseous structure; it was anteriorly situated at the place which separates the two anterior lobes from one another. The arachnoid, pia mater, choroid plexuses, and ependyma of the ventricles of the brain were of a bluish colour. The substance of the brain and spinal marrow did not differ in colour from the normal condition. The membranes of the spinal marrow were of a bluish colour.

The cartilages of the ribs, as well as the subcutaneous areolar tissue of the chest, presented a blue colour.

The lungs themselves were studded with miliary tubercles, and exhibited an increase of bulk, as in pneumonia. In the apex of the left lung was a cavity as large as a pigeon's egg. The ramifications of the bronchi were of a bluish-red colour, as in bronchitis. The heart was small and normal; some serum was present in the pericardium, which latter was of a bluish colour. The cavity of the larynx exhibited numerous erosions, and even small ulcers; its mucous membrane, as well as the ventricles of the larynx, were blue; the bronchial glands were enlarged, and their tissue was very firm. The intestinal canal and peritoneum were coloured blue—the part of the peritoneum which invests the liver was also blue; the hepatic tissue was in other respects normal, as was that of the spleen. The tissue of the kidneys was normal; the papillæ were, however, remarkably coloured, while the cortical substance exhibited only a few black spots.

The skin, the kidneys, the bones, and cartilages were the parts particularly submitted to microscopic investigation.

The Haversian canals and the bony corpuscles, with their radiations, were of a dark colour; the medullary cavities were filled with a dark matter. In the cartilages of the ribs we here and there saw

a black nucleus, which became pale on the addition of cyanide of potassium; some bony cells, too, were evidently filled with a dark granular mass. The deposition was, however, most distinct in the skin and kidneys.

The dark Malpighian bodies were occasionally seen to be still connected with a tubulus uriniferus; in the pyramidal substance the tubuli were all very dark-coloured; hydrochloric acid made them exceedingly black and dark.

The black coloration of the perspiration glands in the skin was perceptible even with the naked eye. The sebaceous glands of the skin, too, were of a dark colour.

Evident as was the deposition of the black colour, it was not easy to decide how far the whole tissue was tinged.

In the microscopic preparations of cartilage and bones a very distinct dark brown colour was occasionally seen in the intercellular substance, which is, perhaps, to be considered as a specific coloration. The membranes of the tubuli uriniferi and of the Malpighian bodies were, like the intervening substance, covered with fine granules. In addition, dark objects were seen, which may be looked upon as black-coloured cells. The corium of the skin was bluish-gray; it was not, however, easy to decide whether it alone, or also the rete mucosum, or the epidermis, was coloured.

Is the colour caused by the presence of silver? To answer this question I availed myself of the assistance of Dr. Heynsius.

A portion of a rib was burnt, and the ashes so obtained were treated with hydrochloric acid. The whole was filtered, and what remained on the filter was washed with water, until the washing, treated with nitrate of silver, no longer exhibited any trace of chlorine. The residue on the filter was treated with nitric acid, and this nitric solution was examined for silver. But neither in the rib nor in the cartilage, which was similarly treated, could the presence of a trace of silver be demonstrated.

A sixth part of the kidney was now burnt, and the ashes so obtained were heated with carbonate of soda before the blow-pipe. In this manner some globules of silver were obtained, which, having been dissolved in nitric acid, were precipitated with hydrochloric acid as chloride of silver. A second attempt to demonstrate in like manner the presence of silver in the cartilage was attended with no better result than the first above described.

In what state of combination did, therefore, the silver occur in the kidney? That the substance was insoluble in the surrounding fluids, we may infer from its having been present during the long period of sixteen years. Was it chloride of silver? No; for liquid ammonia had no effect on it. Was it cyanide of silver? This we can also deny. Concentrated nitric acid produced a development of gas from the dark-coloured parts, which latter at the same time became of a lighter colour. The nitrate of silver so formed was partially precipitated by chlorates present in the surrounding parts,

as chloride of silver, which were recognised as bright flakes under the microscope.

Hydrochloric acid produced no development of gas, so that the gas eliminated by the action of nitric acid cannot have been carbonic acid. The coloration became darker in consequence of the brightening and contraction of the intervening substance.

Therefore, no oxide of silver can have been present.

If the silver had existed in the form of dichloride of silver, it must have dissolved in hyposulphite of soda, which it did not. It may, therefore, have been silver in a state of minute division.

It now occurred to me, by reacting on finely divided metallic silver, to test the supposition that the silver was present in a state of minute division. A preliminary experiment with cyanide of potassium gave the following result. A piece of linen carefully washed with distilled water to remove the chlorides was soaked with nitrate of silver, then dried and slowly burnt, and the ashes were treated with cyanide of potassium. Only a very small quantity of silver was found in the solution. Now, as minutely divided silver is soluble in cyanide of potassium, small portions of the kidney were laid in the latter, and the colour of these, as well as of the microscopic preparation they contained, was distinctly changed.

Hence it seems to follow that the silver was present in a state of minute division.—*Archiv für die Holländischen Beiträge zur Natur- und Heilkunde.* 1857. Band I., Heft 1 und 2, p. 106.

Some Observations on the Dystrophia of Children.

By Dr. R. Küttner, of Dresden.

In our daily intercourse, and, to some extent even in the field of science, the term atrophy has undoubtedly received far too wide an application and been confounded in its signification. Considering the phenomenon of far advanced emaciation as the essential feature, a number of morbid conditions in little children have been only too often comprised under the name atrophy, which are marked by a deep depression of nutrition; and children have been looked upon as atrophic, who, on a more accurate examination, and stricter employment of the term, would be recognised as suffering from a general dyscrasia or an organic affection. The correction of this abuse and the restoration of the word atrophy to its original more limited signification is, however, by no means so idle or unessential a matter as it may, perhaps, appear to many, but has, in addition to the greater accuracy in diagnosis to be thereby attained, also its special value in medical treatment.

The true atrophy, or—as we much more correctly denominate it—the dystrophia of children as an independent form of disease, pædodystrophia, pædatrophia, may, according to the signification of the word, necessarily comprise only that state of depressed nutrition

and general exhaustion, which in little children is occasioned by the insufficient amount or the unsuitable nature of the food. This essential original dystrophy is, therefore, to be strictly distinguished from all those states of emaciation and exhaustion which, occurring as the product of morbid processes, bear a purely symptomatic, secondary character. While in the latter (dystrophia symptomatica) the eye of the physician must be constantly directed to the causal morbid condition, at one time a long-continued local affection, especially of the organs of digestion or respiration, at another a general dyscrasia, as tuberculosis or inherited syphilis,—in the former (dystrophia morbus) the organization is originally, and, so far as morbid states do not accidentally concur, giving rise to complications, thoroughly normal, and suffers only from the want of the formative material so necessary to it. In the one case the physician must meet the affection by combating a morbid state; in the other, by administering suitable nourishment.

The development of genuine dystrophy is, as the organism constantly needs the access of nutritive matter, evidently possible at any time of life, but at no age is the tendency to it greater than in the earliest infancy. For, on the one hand, the delicate digestive organs of the child are by nature for a long time destined to one particular form of food, the mother's or the nurse's milk, all substitutes for which are only too apt to be insufficient; while on the other, the infantile system growing most rapidly, the more quickly and sensitively feels the want of suitable formative material. But dystrophy is exemplified not merely most frequently, but most accurately, in the young child, who, still for the most part free from products of disease, and still unaffected by exhausting bodily exertion or distracting mental affections, which, at a more advanced period of life, usually accompany a state of privation, and greatly modify its phenomena, only physically feels and exhibits the want of nourishment. For these reasons dystrophy has certainly been correctly admitted specially into the pathology of childhood, and considered as a particular affection of the earliest period of life, the time of suckling.

It is of practical importance to distinguish two species of dystrophy according to their origin, whether the latter be attributable to a simple deficiency of nourishment (dystrophia simplex), or whether the nature of the food is at the same time unsuited and irritating to the delicate digestive organs of the child (dystrophia dyspeptica). The former, of course, occurs almost only in sucklings, starving on the ill-supplied breast of the mother or the nurse; the latter, by far the more common, is mostly the sad result of artificial feeding, which carries numberless children to the grave[a].

[a] It is principally poor little children, committed to nurses, who are liable to this fate. A statistical table, deduced from the Reports of the Foundling Hospital, shows, that while among the children under their mothers' care, the mortality among children under two years of age did not amount to quite 19 per cent., in those under the charge of nurses it attained to 29 per cent.; and was generally caused by dystrophy.

A detailed description of the phenomena characteristic of the dystrophy of children might be superfluous to the readers of these pages: I shall, therefore, allude to only the most essential symptoms. Occupying the first place among them in a material point of view is the manifest deficiency of blood, exhibiting itself in the general paleness and in the diminished bodily heat. Hand in hand with it goes the insufficient metamorphosis of tissue, which, commencing with general relaxation and flaccidity, gradually leads to the complete disappearance of the cushion of fat, and finally gives the little sufferers an old or ape-like appearance. Among functional phenomena we have a constant craving for food, thrusting the little hands into the mouth; unceasing restlessness by day and night, which yields for only a short time to the administration of food, and at last passes into the highest degree of listless exhaustion; lastly, a very great diminution of the urine, often giving rise, through the acridity of the concentrated secretion, to a kind of dysuria, and a frequently torpid solid and scanty alvine discharge, which is watery and diarrhœal only when catarrh of the bowel exists. This collection of symptoms presents the idea of dystrophy in its simplest form. In dystrophia dyspeptica we observe, of course, in addition, the phenomena of deranged digestive powers and of the collection of indigestible matters in the stomach and intestinal canal, by which these organs are brought almost into a state of chronic catarrhal irritation. Therefore, vomiting, the occasional formation of acid flatulence and diarrhœa, erythema of the cavity of the mouth, with the development of fungi and of sores around the anus, appear as concomitant symptoms, which undergo numerous modifications in form and intensity according to the different nature of the deficiency in the nourishment. As secondary attendants on dystrophy, especially on its dyspeptic form, convulsive phenomena of all kinds may certainly occur, but they are in reality much rarer than is popularly supposed, the entire train of symptoms being only too readily attributed, not to its real cause, but to so-called inward spasms, and for these assistance is demanded. Public institutions, such as our Foundling Hospital, afford hundreds of opportunities of making observations of this kind. At one time the poor starved little ones are brought to seek relief for their constant uneasiness, their crying and their want of sleep; at another time, for their urinary affections; at another, for derangement of the bowels; but most frequently for the supposed inward spasms.

The post-mortem examinations in simple dystrophy present nothing characteristic in addition to the highest degree of deficiency of blood, as well as in general of insufficient nutrition of all the tissues. In dystrophia dyspeptica, on the contrary, we find traces of a catarrhal condition of the gastric and intestinal mucous membrane, with swelling and black punctation of Peyer's glands, or actual bursting and ulcerous destruction of the same. The fundus of the stomach, as well as some parts of the intestinal canal, are often

found in a state of gelatinous softening, in consequence of the presence of contents which have passed into a state of acid fermentation, while the liver appears at one time anemic, at another overloaded with dark blood, but the bile is always remarkably thin and pale. That complicating morbid conditions, frequently hastening or directly causing death, which leave their traces in the dead body, as for example pneumonia and cerebral affections, must be distinguished from pure dystrophy, is self-evident. The swelling and hardening of the mesenteric glands in atrophic patients, on which so much stress was formerly laid (as Dr. Stiebel, Jun., also has shown in his treatise "On the Condition of the Mesenteric Glands in Childhood, and their relation to the atrophy of the first year of life" (Frankfort-on-the-Maine, 1854), are by no means constant, and at least in no case constitute an essential post-mortem appearance in dystrophy, often as the latter is considered and described as tabes mesenterica.

As I have already remarked in the beginning of this paper, dystrophy is among the most frequent causes of death in the first year of life, as a very considerable number of artificially fed children fall a sacrifice to it. Notwithstanding, the prognosis is not at all so unfavourable as one might at the first glance suppose, and in every case it is much better than in the symptomatic variety caused by diseases. It is truly surprising how quickly and completely such children often recover, and indeed even within a few weeks become so changed as not to be recognised, so soon as food adapted to their digestive organs, and sufficient for their wants, has been supplied. If it is possible to transfer the suckling languishing on the empty breast of its mother, or the child wasting away on unsuitable artificial food, to a good nurse, care should be taken that if the latter appears unequal to her task, she should be exchanged for a better, the consequence of which will be the disappearance in a short time of all the symptoms arising from the insufficient supply of its wants, and the often rapid transformation of the little image of misery into the round, soft forms characteristic of infancy.

From what has been said it is evident, that from the nature of the case, the treatment of dystrophy is not to be pharmaceutic, but that the entire task of the physician consists in the administration of nourishment quantitatively and qualitatively suited to the wants of the child. It is attributable only to imperfect knowledge of the affection, and of its causes, that the treatment is so often actually different. All those far-famed children's powders and syrups, with which nurses, and even physicians are so ready, to combat particular symptoms, are as unavailing as tonics, astringents, or narcotics. They are only signs of a false diagnosis, and easily contribute to aggravate the patient's state. Unfortunately, it is, however, often impossible to procure for the little sufferers the only efficacious remedy—sufficient and suitable nourishment—which mostly can be found only in a good nurse. This is particularly the case in public institutions, which, destined for the service of the poorer classes, are

most frequently resorted to on the behalf of such sufferers, and yet can do nothing more than give suitable advice to the mothers or nurses. With the above view, we are in the habit of recommending, in the Dresden Foundling Hospital, for starving sucklings, the contemporaneous administration of good cow's milk, so as fully to satisfy the children, and, in those who are artificially fed, of regulating the diet as far as possible according to the principles which I have already published in my aphorisms on the feeding of little children. Medicines I give only according to special indications, as in cases where complications exist. Instead of them, I have derived great benefit, especially in dystrophia dyspeptica, from administering, three or four times a day, from eight to ten drops of Malaga, Hungary, or Port wine, to the little patients; and this plan I can under such circumstances the more strongly recommend, as, by prescribing the wine in the form of a medicine, the physician will no longer appear as an idle spectator, in the eyes of relatives, so often desirous of the administration of medicine. That this small quantity cannot act as a nutrient[a] is evident, but it acts as a condiment to the digestive organs, and makes them more capable of digesting and assimilating the food which is supplied often in sufficient quantity, but in a state of unsuitable preparation and admixture. Thus, at least, I believe the remarkable effect of wine under the circumstances above mentioned, which has been confirmed by hundreds of cases, is to be explained. When the dystrophy is removed, wine is of course again left off, as in well-fed, plethoric children it only too easily induces an insidious cerebral, affection, even though given in small but long-continued doses.—*Journal für Kinderkrankheiten*, April, 1858, p. 184.

On Emboli of the Superior Mesenteric Artery. By Otto Beckmann.

Among the abundance of beautiful cases with which Professor Virchow has decorated his works on Thrombosis and Emboli are three of great interest, in which, with other vessels, the superior mesenteric artery was obstructed ("Ges. Abhandlungen", pp. 420, 438, 450). I venture to add to the foregoing a new case, which is but very slightly complicated, because in it a hitherto unobserved result of this affection was found in the intestine. The following is the case:—

The body of Katharina Treutlein, a pensioner, aged eighty, was brought for dissection, seventeen hours after her death, on the 19th of September, 1857. The body was rather emaciated, with slight œdema of the lower extremities. The heart was tolerably fatty,

[a] It is well known that Kletzinsky has discovered a considerable amount of lime in Malaga and Tokay wines, and that he ascribes to this fact a considerable share of their beneficial action.

with some tendinous spots, moderately hypertrophied, especially the left ventricle, with corresponding moderate dilatation of the cavities. The mitral valve was found with slightly shortened and thickened edges; the papillary muscles on the left side were short and thick, with strongly tendinous, partially calcareous points; the endocardium was opaque and thickened in spots. In the right side of the heart there was nothing worthy of note. The muscular structure of the heart was dense brownish-red, on the left side traversed by some tendinous striæ. The aortic valves were rather thick and rigid. The ascending aorta was very wide; on a section above the valves it measured nine centimetres (about three and a half inches), and, beneath the point of origin of the innominata, eleven centimetres; on becoming the descending aorta it rather suddenly contracted, although the latter still measured 6·5 centimetres (about two and a half inches). Beneath the origin of the renal arteries a contraction of the vessel to four centimetres (one and a half inches) took place from a fold projecting from the right side into its cavity. The aorta above its division measured 4·5 centimetres; the right iliac artery, 3·7; the left iliac, 3 centimetres. Throughout the whole arterial system, even to the finest branches, existed a state of chronic endarteritis; immediately in front of the constricted part was, in the inner coat of the arch of the aorta, a calcareous lamina, as large as a groschen [the size of a silver three-pence], which, somewhat loosened on the side looking towards the heart, projected directly into the cavity of the vessel.

Both pleural sacs contained some sanguineous fluid. The lungs were slightly adherent; the apices were highly coloured and condensed; the parenchyma was atrophic; in the left were two fresh hemorrhagic infarctions on the anterior surface of the lower lobe. In the small bronchi was a tolerably large quantity of gray viscid mucus.

The capsule of the spleen was rather thickened; the organ itself was moderately large and dense, presenting numerous fibrous cords in a scanty brownish-red pulp. The liver was thick, dense, and congested; between the acini were delicate fibrous fasciculi; the general appearance of the organ was brownish-red; more accurately examined it exhibited little acini, with red centres and darker periphery. The bile ducts were large. At the lower edge of the liver, somewhat displacing the gall-bladder, was situated a movable round tumour of the size of a small fist, bounded internally by the duodenum, and inferiorly by the colon. This tumour did not appear to be anywhere connected with the surrounding parts, lay in the laminæ of the peritoneum, and exhibited a cyst. In a moderately vascular capsule of dense connective tissue, in some places thickened and white, in others transparent, was a neutral, amber-coloured, clear fluid, containing a considerable quantity of albumen, in which floated some masses, as large as peas, consisting of finely granular fat, without further admixture than that of a small

amount of substance interstitial to the fat granules. No epithelium could be demonstrated on the wall of the capsule.

The left kidney was of normal size, dense; the surface was smooth, with evident lobular marking; the cortical substance was grayish-red and with distinct Malpighian bodies, many of them calcareous; the pyramids were fibrous. The right kidney was smaller, its surface uneven; the cortical substance was not much atrophied. There was tolerably extensive fatty degeneration in the cortical part of both kidneys, with a somewhat increased amount of intervening tissue; in the canals of the tubular portion at the basis was partly fatty detritus, or rather albuminous masses, with many pigment granules, towards the papillæ becoming homogeneous masses.

The stomach was dilated, the mucous membrane thickened, verucose, covered with reddish-gray viscid mucus. The mucous membrane of the duodenum, and of the greater part of the jejunum, was hyperemic, succulent, and swollen; the contents of the latter were fluid dark blood. The mucous membrane of the whole of the rest of the small intestine to near the ilio-cæcal valve was covered with greasy bloody masses, and appeared uniformly dark bluish-red, without further change. The microscope exhibited everywhere more or less decided imbibition with the colouring matter of the blood. The large intestine was filled with fæces coloured with bile, without the least admixture of blood; its mucous membrane was somewhat thickened; in the mucous membrane of the transverse colon were two small ecchymoses. In the superior mesenteric artery, exactly at the point where the ilio-cæcal artery is given off, was situated, at the bifurcation, filling the entire cavity, a thrombus about three-quarters of an inch in length, dense, only in parts somewhat deprived of colour, which was very slightly adherent to the unaltered vascular wall (leaving out of our consideration the general change of the arteries already mentioned), and extending about half an inch into the two branches, and ending in a cone. Nothing particular was observed in the mesentery.

In the femoral vein little thrombi were suspended in the valves, in addition some muscular veins of the thigh of the same side were plugged.

The dura mater was thickened; the pia mater was injected and œdematous. The brain was tolerably firm; the convolutions were small; the gray substance was atrophied. The ependyma of the ventricles was greatly thickened; the cerebral vessels were moderately altered.

The most remarkable points in this post-mortem examination, in addition to an extensive change in the vascular walls, particularly in those of the arteries, and the results of such a change, are the plugging of the superior mesenteric artery by a thrombus, and considerable hemorrhage in and upon the mucous membrane of the intestine throughout its whole extent, while no blood had been able to penetrate into the afferent arteries. That the latter circumstance

was due to obstruction of the vessels cannot be doubted, as no other cause for hemorrhage existed; the question is only how the bleeding occurred? The thrombus in the artery may, it appears to me, be decidedly considered as embolic, as it satisfies all the conditions of such a change; its situation at a bifurcation of the vessel, with a short prolongation into the branches given off; the emptiness of the arteries beneath the seat of obstruction; the relation of the thrombus to the vascular wall, are characteristics enough,—so that the circumstance that no parent coagulum or other source of origin could be found, cannot invalidate this opinion.

The possibility of the formation of a coagulum, whether in any part of the left side of the heart, or, as is more probable, on some rough part of the wall of the aorta, perhaps on the calcareous plate already mentioned, is certainly admissible from the above described state of the circulatory apparatus; the entire coagulum, which had formed, was then probably separated and conveyed into the mesenteric artery. Now, this emboli was formed not long before the woman's death, as is shown by the state of the contents of the large intestine and the freshness of the effused blood, which latter had for the most part flown into the upper part of the small intestine, and was driven along; by examining similar cases and by experiments on animals, the supposition is sanctioned that the emboli had taken place within the last twenty-four hours, certainly not immediately before death, as a certain time is necessary for the development of the hemorrhage. In every vascular rupture we have a disproportion between the degree of distention and the cohesive power of the membrane; an enormous distention is as capable of bursting the normal coats as the normal pressure is of destroying the continuity of an altered and weakened vascular membrane. Hence is evident the importance of lesions of nutrition of vessels, particularly of the capillary membranes, in thromboses of different arteries, to which Virchow has repeatedly called attention. It will also be understood why a certain time is requisite before the hemorrhages usually occur under such circumstances. In rabbits in whom I tied the superior mesenteric artery in the upper part of its course, no hemorrhage had occurred in from four to six hours. In the above case the minute vessels had manifestly previously been in a weakened condition, and therefore a slighter force or a shorter time was required to produce the extensive solutions of continuity. The question now is, how the membranes are distended to bursting, or in what way the blood after the obstruction of the large artery again reaches the capillary vessels. For this the well-known modes exist, namely, the blood arrives in the capillaries through the collateral arteries or through the veins, in which latter a certain quantity of blood stagnates on account of the deficient *vis a tergo*, by regurgitation from the neighbouring veins which are still in action. After a review of several circumstances, the author inclines to the latter mode as affording the best explanation of the hemorrhage in the intestinal mucous

membrane accompanying the obstruction of the superior mesenteric artery in the above recorded case.

Lastly, I would allude to that peculiar cyst of the peritoneum above described, although I regret that my account of it must be imperfect. Such formations appear to be rare. In the "Bulletin de la Soc. Anatom.," 1851, p. 135, Mesnet describes a serous cyst, of the size of a large egg, in the mesentery towards the end of the small intestine, which was found in a woman. Whether the cyst-like tumour described by James Grey Glover (a large steatomatous tumour of the lesser omentum, Edinburgh Medical Journal, April, 1857) was of this nature, I cannot decide.—*Virchow's Archiv*, Bd. xiii., viertes und fünftes Heft, 1858, p. 501.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*On Cancer.* By MAURICE HENRY COLLIS, M.B., M.R.I.A., F.R.C.S., Surgeon to the Meath Hospital and County Dublin Infirmary; and Examiner in Surgery to the Queen's University in Ireland.

(*Continued from* p. 62.)

IF we eliminate those growths which, however they may resemble cancer, yet are not identical with it, we shall find genuine cancer to present itself in external parts under two typical forms,—the one, acute, in growth tuberiform, in outline soft, and brain-like in consistence; the other, slowly developed, hard and tense, with far-reaching roots. Let us anatomize these varieties known as *encephaloid* and *scirrhus.* Acute or encephaloid cancer, for many reasons, must be considered the type of the disease: in all other forms of disease we accept the acute as typical, nor is there any reason for not doing so in cancer. In acute cancer we have the special element in greatest abundance, in greatest activity of life and growth, producing disturbance and destruction, not, indeed, in proportion to the size of the tumour, but in proportion to its rapidity of development; if neglected, bringing death at an early period; and finally, more amenable to treatment.

The last statement is not yet universally accepted. There are still some who believe that encephaloid cancers are not so safely removed as scirrhous; but the experience of most surgeons will bear me out that permanent recoveries are less frequent in the chronic cases. Not only are local relapses more common after removal of scirrhus, but the disease has more frequently implicated distant parts, and the seeds of death are sown from secondary growths, often before the advice of the surgeon has been sought. For these reasons, I take encephaloid as the typical form of cancer; at the same time, I do not believe that there is any greater difference between scirrhus and encephaloid than what exists between the acute and chronic forms of any other disease; and that, however convenient the terms may be for clinical purposes, as marking the extremes of slow or rapid development, yet that in practice we meet infinite shades of rapidity; and that, of many cancers, it were hard to say whether they are acute or chronic, encephaloid or scirrhus. This is seen by one example:—One author will call a tumour lardaceous scirrhus; another has it lardaceous encephaloid; and this because the lardaceous form of cancer holds a sort of midway place in rate of growth. Having dissected encephaloids of three months' growth, no larger than a haricot bean, and scirrhus of many years' duration, with intermediate forms of various date, I have come to the conclusion that there is no difference between any form of genuine cancer which is not explicable by rate of growth, or, in other words, inherent active vitality of the tumour. This alone throws up a broad barrier between them and the cancroid growths, even if their anatomical characters were less strongly marked than I have found them to be. The action of cancer on the proper structures of the body is, in fact, referable to very simple laws—it acts very much as a foreign body—and, whether in the acute or chronic type, its effect on the tissues can be explained by laws resembling those which regulate the conduct of fibrous tissues in presence of foreign bodies, while the effects of cancroid growths are referable more to the various forms of absorption, ulcerative and interstitial, such as hypertrophies of natural structures will produce. I do not mean to say that there are not points where these two classes of effects touch, and are almost possessed in common by both cancer and cancroid, for such undoubtedly are occasionally met with, especially in the more advanced stages of each disease; but the type of alteration in neighbouring parts is broadly different in the two classes of cancer and cancroid; and, generally speaking, it cannot be reduced to the action of one general law, such as will be found

to govern the disturbances produced by cancer of every form and degree.

Encephaloid cancer, in the earliest appreciable stage, is a collection of cancer cells or nuclei, rapidly formed in great numbers, not apparently deriving their origin, as the epithelial cells always do, from a membrane, but seemingly isolated among the proper tissues of the part in which they grow. How the first cells are formed, whether by a morbid development of natural lymph cells or epithelial cells, anatomy does not teach us, nor have we derived any assistance from it in determining the question of constitutional tendency. Once formed, however, there is no difficulty in following their progress, and observing their effects. They accumulate rapidly in encephaloid; new cells form rapidly in the abundant fluid which they draw forth from the neighbouring blood-vessels; the proper fibrous and vascular tissues of the seat of disease are at first expanded over the masses of cells, or, rather, are pushed aside and separated by them, so that in proportion to the rapidity of development is the paucity of stroma. The stroma of an acute cancerous tumour is, in fact, only the natural fibrous tissue of the part affected. If the tumour grows rapidly, the cells accumulate in large masses, with the smallest possible quantity of fibrous tissue holding them together, and the capillary circulation through the tumour, although minutely divided, does not reach all the cells. Whatever lymph may be diffused among them is quickly appropriated to the development of fresh cells: in one word, the balance of growth is in favour of the new cellular elements of the tumour, and against the fibrous. The activity of the cancer is so great that the neighbouring parts are simply pushed aside by it, and do not at first take on the chronic thickening, which is the result of a slower and long-continued irritation. From this mode of growth it would result that the most perfect form of acute cancer should be globular in outline, and such we see to be the tendency.

Where no fascia or band of fibrous membrane interferes with the direction of growth, the outline is always circular; but no tumour can acquire any large dimensions without encountering many such obstacles, and hence the tuberiform outline that characterizes encephaloid cancer. If the cells are developed in loose areolar tissue, the shape is generally globular, while in glands it is tied in by bands in all directions. We rarely, if ever, see this typical form of acute cancer preserved throughout a tumour. Here and there a nodule is found in which these characters can be seen and studied, but in every tumour we also see traces of the chronic type; the cells act in time, as foreign

bodies, upon the fibrous tissues near them; they irritate them, and cause condensation. This effect may be studied with profit. There is nothing special in it; although many of the best marked features of scirrhus are due to it, still, there is nothing but what results from chronic inflammation, by whatever cause produced. Any one who has carefully observed the effect of long-continued irritation on fibrous structures will agree to this. The clinical peculiarities of chronic cancers are all explicable from this point of view, and thus are referable to one of the simplest pathological laws possible. The same contractile tendency of inflamed fibrous tissue produces the cirrhosed condition of liver, the deformed cicatrix of burn, and the retracted nipple and stony hardness of scirrhus. The cause of the inflammation may be different, but the product of the inflammation is the same in all. In cancer the cells act as the foreign or irritating body. They cannot lie for any time in contact with areolar tissue, or fibrous bands of fasciæ, without irritating them, and causing an effusion of plastic lymph into their substance. This lymph, from its subsequent low organization, contracts, condenses itself, and finally strangles and atrophies all the non-fibrous substances in its neighbourhood—even the cancer cells are not spared. They disappear to a great extent from the centre of old scirrhous growths, and the hard, stony mass which takes their place contains fewer of them in proportion to the age of the growth. As in certain cases of chronic pulmonary phthisis, this contractile tendency of the effused lymph condenses the proper tissue of the lungs, and so leaves no place for tubercle to remain, so is it in chronic scirrhus of the breast. And as in phthisis a permanent cure seldom takes place as a result of this effort of nature, so also in cancer. Plastic effusion surrounds the original seat of deposit, and in this plastic material new tubercles form, or the germs of new cancer cells, as the case may be, and thus the disease extends in constantly widening circles,—the very lymph that is to check or cure the disease in one point is the means by which the fatal germs extend far on into neighbouring parts. This is a fact of no light clinical import, both as furnishing us with diagnostic marks of cancer, and a rule for appropriate treatment. Let it be observed, that the epithelial growths, the simple fibrous tumours, and all other that could be confounded with genuine cancer, are free from this peculiarity,—they do not act on neighbouring structures as foreign bodies. Even the epithelial growths, when infiltrating the tissues, produce absorption, not condensation, and are consequently devoid of all the symptoms which result from this contractile formation. This is explained, in

part at least, by the fact that epithelial cells are associated with a secreting membrane which, as a rule, is pushed on before the masses of cells, and therefore they act by a simple process of pressure, causing atrophy of the parts they press upon, although occasionally I have found separate cells, apparently without an intervening membrane, attached to tissues—generally to muscular fibre; even when epithelial growths extend down to bone, and destroy it, it will be found to be destroyed by ulcerative absorption—the result of pressure—rather than by infiltration of cells between the osseous particles.

The action of cancer on bone, on the other hand, is similar to that on soft parts; it inflames the bone, causes an infiltration of lymph, develops new cells in the lymph, and so pushes its way between the layers of the bone, and destroys it by an infiltrating process, not by simple ulcerative absorption, the result of pressure upon its surface. No doubt, in the end the natural structures are removed by a process of absorption in either case, but the preceding steps are essentially different. The cancroid growths are simply hypertrophic, as a general rule; the cancerous are infiltrating; the one destroys by surface pressure, as any hypertrophy of natural structure destroys; the other acts as a foreign body, separates the tissues by infiltration, softens them by the inflammatory process, extends itself between them in all directions, and finally, by the contraction of the product formed, destroys the proper structures.

The differences are well marked in the earlier periods of growths, and point to a considerable essential difference: when epithelioma grows rapidly, and extends down to soft and yielding structures, such as muscle, the difference becomes less marked; the secreting membrane either disappears, or becomes so attenuated as to be discoverable with difficulty, and the clinical features of the disease are in proportion more malignant; the disease, in fact, becomes similar, in some of its effects, to genuine cancer, though there are still sufficient points of difference, both pathological and diagnostic. The contractile action of chronic inflammation upon fibrous structures gives rise to many phenomena of value in the differential diagnosis of tumours. The retraction of the nipple in scirrhus of the breast results from the shortening of the milk ducts under the chronic inflammatory process; the dimpling of the skin by retraction of fibrous bands which are attached to it; the fixing of the tumour to the fascia over the pectoral; the drawing of the gland outwards towards the axilla; not to mention the small size and stony hardness of the very chronic cases,—are all results of this one process. As I said before, no other tumour produces the

same effect on the fibrous membranes, and consequently in no other growth have we these phenomena. Encephaloid cancers even are destitute of them in proportion to their acuteness. I have seen cancer of the breast, the size of a small infant's head, in which the nipple hung down loose and long, while the tumour was unattached to fascia or gland, and the skin, though tightly stretched, almost to bursting, was perfectly free from unhealthy attachment to the subjacent growth.

Another and perhaps still more important result of this inflammatory action is the extension of the cancerous deposit to the skin and glands. If we examine the skin over a chronic cancer we shall see that it appears dimpled or depressed in points which correspond to the orifices of cutaneous ducts, and consequently to the points at which fibrous membrane is attached to its under surface. Not only is it thus depressed in points immediately over the tumour, but even to some distance from it the dimpling may be observed, getting more faint as it radiates further from the centre of irritation: these more distant depressions show that the inflammatory process of shortening has seized on the ends of those fibres which are nearest to the gland,—in short, they are sure forerunners of the cancerous infiltration which follows in the interstices between them. The portion of skin which presents these minute lines and points of depression is not necessarily poisoned, although doubtless all but so. I have traced these depressions to a distance of several inches from a very chronic cancerous tumour no larger than a hazel-nut, which subsequently became developed so as to admit no doubt of its nature. The shortening of the fibre which has one end attached to the tumour and the other to the skin will produce a dimple in the skin, even though the shortening be seated only in the end close to the gland. Infiltration of cancer cells, however, follows closely on the track of this shortening; in the interstices between these inflamed fibres the cells push on, the plastic lymph which their presence has excited forming the material for their reproduction, until by degrees they impregnate every interstice of the subcutaneous areolar tissue, and, advancing on into the substance of the skin, are deposited in considerable numbers wherever they can find room. We then have the skin presenting numerous depressed points, much deeper, and separated from each other much farther than in the healthy state; the skin looks coarse, and has a brawny feel; the points of the ducts are so far apart, and the skin so much thickened as to look like the rind of bacon, or as healthy skin would appear through a pocket lens. Simultaneously with this poi-

soning of the skin, the lymphatic system, so closely allied to the skin, becomes entangled. The process seems identical with that above described, and the poisoning of the one will generally coincide with that of the other.

In encephaloid cancer the skin and glands remain alike free from cancerous deposits until the stage of ulceration; the skin becomes daily more strained and attenuated: at last it cracks in a minute point or line, the fissure extends, and by degrees an ulcer is formed; the edges of the ulcer almost at once become inflamed, and the cancer cells shoot into the plastic lymph. Thus the integument becomes incorporated with the growth, and the cells underneath, restrained no longer by their dense covering of skin, shoot out in fungous masses, and accumulate with immense rapidity. The ulceration of the skin is at once followed by a sympathizing irritation of the lymphatics, and this irritation is but the precursor of cancerous infiltration of the absorbent glands. Thus, both in encephaloid and in scirrhus the poisoning of the skin is the signal for the cancerous enlargement of the glands. The practical difference between the two is that, in the one, poisoning precedes ulceration; in the other, it results from it,—so that in scirrhus the glands are hopelessly poisoned long before the stage of ulceration, while in encephaloid the glands not only may, but generally do, remain free from cancer until ulceration is fairly established.

Scirrhus or chronic cancer destroys the proper texture of its seat more completely than encephaloid. The latter infiltrates that part in which it has its origin with rapidity, pushes aside the proper glandular or other structures, and grows so fast as to seem to have no time to destroy them. It also expends its energy very much on the spot where it first appears. If in the breast, but one lobule will be infected, the rest being thrust aside and lost among the mass of disease,—little altered in structure, it may be, except where the unusual size of the new growth produces a mechanical reduction of the healthy parts by pressure. Where the seat of disease is less distinctly isolated, a more general diffusion of the cells is the result, as, for example, in the testis and bones. In fact, in encephaloid of the acutest types, the disease destroys the patient by profuse discharges and racking pain, often before it has time to destroy the gland or tissue in which it originated. The disease appears in its simplest form of an infiltrating growth. In scirrhus, on the other hand, we have the irritating nature of the deposit brought to light. Essentially a foreign body, we have seen it irritate, inflame, and condense the fibrous structure beside it.

These contract on the special glandular tissue or muscular fibre, and even upon the vascular elements of the seat of disease, and by their resistless grasp compel their disappearance. This destruction of proper tissue is, however, but the result of the contraction of the *tissue inodulaire*, or low organized lymph, which the pressure of the cells calls forth, and the cells themselves seem to have no direct power of destruction.

The absence of this *tissue inodulaire* in connexion with those growths that are named, somewhat pedantically, *homeomorphous* is not a little singular, and is unexplained by those who assert their identity with cancer. I know no other way of accounting for this absence than that these growths being homeomorphous, that is, composed of tissues not different from the ordinary constituents of the body, are not productive of irritation such as cancer produces, and that cancer causes the irritation which in turn gives rise to the contractile tissue, because it is heteromorphous, or at least differs from any of the ordinary healthy constituents of the body. I have lately had an opportunity of dissecting an epithelial tumour of the leg, in which the cautery had been extensively used. The cicatrix was perceptible beside a mass of epithelial cells; these were contained in delicate membranes, and arranged in numerous convolutions, tightly packed and jammed against the tough cicatrix, but in no point had they effected an entrance into its substance, much less a perforation of it; it had acted as a complete bar to the spread of the growth in its direction. Here was a corroboration of the view I have given above. Not only was there no tendency to that form of local irritation which ends in the formation of the *tissue inodulaire*, but where it had been, as it were, accidentally produced, it had so little in common with the epithelial growth as to refuse to amalgamate with it. I need scarcely say that the presence of a band of cicatrix would operate as an assistance rather than a bar to the spread of cancer.

When we have once got a clear conception of the mode in which the two extreme forms of acute and chronic cancer are developed, and of the effect the morbid growth produces on neighbouring textures, the intermediate forms are easy to be understood. The typical forms are rarely met with in such purity as I have described. Shades of variety will be found in every tumour: even the most rapid growth is more or less nodulated and tuberiform from intersecting bands, and these not merely of fascia or duct rendered tense by the interstitial deposit of cells, but more or less condensed and shortened by the inflammatory process; while in the most chronic tu-

mour portions will be found, especially in the outskirts, in which the cells have been but lately formed, in smaller numbers, to be sure, than in encephaloid, but identical with it in substance. The principal variety intermediate between the two extreme forms is the lardaceous cancer, known also by a variety of names, such as napiform, apinoid, &c., all drawn from the physical characters of the section of the tumour, which the fancy of the surgeon compares to that of a turnip, pear, or other vegetable growth. I prefer the term lardaceous for many reasons: it suggests the resemblance of the integument to the coarse rind of bacon; the section of the tumour also is like that of the coarse fat of bacon; and finally, these appearances and its greasy feel are due to the entanglement of a considerable quantity of fat in the interstices of the growth. This lardaceous form is perhaps the most common in which cancer attacks the female breast. Not only is there generally considerable natural fat in the organ, but the tendency to the formation of cancer is greatest at the turn of life, at which time also females are apt to lay up an increased store of fat in the subcutaneous tissue. Hence the cancerous element becomes deposited in a fatty nidus; its action is modified by the presence of fat, on which it acts more slowly than on the fibrous and glandular structures. I have already explained that the primary injury done to neighbouring parts by cancer cells is the irritation and condensation of the fibrous tissues, and that the secondary effect, produced by this condensation, is the removal of glandular or muscular tissues by absorption.

Fat is not easily removed by pressure; the pressure that would cause rapid removal of muscle has little if any effect on it. Hence we find cancers of the breast often exhibiting a rapid growth, by a contemporaneous deposit both of cancer and fat, and hence also in later stages, when general wasting has set in, we observe the apparent anomaly of a wretched wasted frame, and a breast still loaded with fat. Not only does fat slowly yield to the atrophy which cancer produces, but it performs an important function in aid of the wasting of muscle and glandular tissue. The death and removal of muscular fibre, and of the secreting epithelium of the mammary gland, are brought about by fatty or oily degeneration. To be sure, this is not confined to the cancer: the oily degeneration of these tissues is the ordinary mode of their removal, when they have done their work, and are to be removed. Of these changes it is not my intention to speak at present; they are very interesting, and easy to study, and will well repay the student of pathology.

In connexion with cancer this oily degeneration does not

differ from what arises in muscles which from any cause are restrained from action. The oil globules are seen adhering to the interior of the myolemma in variable quantities; according as the work of destruction has advanced, they take the place of the proper muscular substance, leaving the albuminous envelope untouched. Where any muscles have been restrained from motion, or where cancer occurs in an extremity, and prevents the use of the limb, this fatty degeneration is quite visible to the naked eye. In the case of amputation for epithelial cancroid of the leg, to which I have above alluded, the superficial muscles of the calf were comparatively of a healthy red colour, while the solæi, which had not been called into use, and which were more implicated at their edges than the gastrocnemii, were so far gone in fatty degeneration as to be of a yellow bilious hue. On examination I found the oily state of the muscles to extend far beyond any sign of cancroid deposit. Had I not been acquainted with this condition of muscle, the appearance of the limb might well have startled me, as at a first glance it may have seemed as if the knife had not been carried clear of the disease. Let these appearances, resulting from the presence of fat or oil, be taken at their proper value, and they will be found to present little that is special or peculiar as far as cancer is concerned. Cancer uses the ordinary means for the removal of structures, and among these the process of disintegration by oily degeneration. I am urgent on this point, as I have seen good surgeons alarmed or puzzled by appearances easy of explanation and harmless in themselves; and still more frequently have I heard sound opinions given from mere clinical experience, without an effort to explain, or even to comprehend, the scientific grounds which would enable others to arrive at similar safe conclusions.

On this head I may safely say that microscopic investigations alone have enabled me to make any use of the valuable experience of the distinguished surgeons of the Dublin school. Had I not made myself familiar with the forms of the disease as revealed by the microscope, their valuable instructions would have only tended to render a subject, which is of itself obscure, utterly unintelligible. The "tactus eruditus" which enables an experienced hand to determine what tumour can be safely removed, and what should not be touched, cannot be imparted by any clinical teaching; but the careful investigation of the anatomy and pathology of these tumours will teach the student as much, if not more, than he can learn from any man, if he is careful to combine it with judicious clinical observation.

I have already referred briefly to the mode in which cancer

cells perish when they have reached their term of existence. How long any given cell will live, we have as yet no means of ascertaining; but we find that it may have either of two distinct ways of death, and in these it resembles other cells, both natural and pathological. The round, full cell of encephaloid perishes by oily degeneration; the flattened, angular, or elongated scale of scirrhus dries up, cracks, and falls away into dust: all parts of the cell, the envelope or cell wall, the nucleus, and contents, alike perish in these ways. In encephaloid the cell wall resists destruction longest, and when it gives way, nothing is left but a mass of oil globules held together by the law of attraction, and easily dispersed. In scirrhus the nucleus is frequently seen entire in the midst of the dust and fragments of the cell wall and granular contents. Here, too, we find the modes of death which affect cancer cells similar, indeed identical, with those which destroy other cells, whether healthy or morbid. Nature does not multiply her processes needlessly even in disease.

One strong proof, if more be needed, of the unity of cancer in all its forms is to be found in its general activity in the young, and its slowness in the aged or infirm. Even the exceptional cases of great activity in these latter classes are only striking proofs of the same. Encephaloid we find to be essentially a disease of the child, or, where an adult is attacked, some organ of slow development, as the testis or breast, is generally its seat. When it does attack the aged or infirm, how fearful are its ravages! The child with fungus of the eye-ball may seem well-fed, and ruddy; the adult woman with encephaloid of the breast remains in excellent health as long as the skin is unbroken; but the man of fifty, with acute cancer of the parotid, is rapidly deprived of all vital energy, he becomes all at once shrivelled, pallid, and exhausted,—all the powers of life seem to have left him, and to become centered in the tumour,—and this grows at a rate beyond anything seen in the young, until the patient is worn down by agonies of pain, even before any ulceration has taken place to give rise to destructive loss. In all these forms we see the acute type of the disease, of great activity, most frequent of occurrence in those whose vital processes are rapid, and, when it occurs in the feeble, overwhelming their powers of life by its inherent activity of growth. Scirrhus, on the other hand, is a disease especially of organs that have ceased to be active, or have been overworked, and are prematurely worn out. A large proportion of all tumours is composed of scirrhus of the breast, and nine-tenths of these occur after the age of forty-five. The organ has ceased to

have a very active life, and the disease is therefore slow in its progress. If we look to cancers of the uterus, we may see apparent contradictions to this statement, but apparent only. In the first place, a large proportion of so-called cancers of the uterus are really epithelial growths, seated on extensive cancroid ulcerations. Genuine cancers of the uterus are not so common, and when they are of the acute type, their course resembles that of cancer of the parotid in the old, both in rapidity and severity.

I shall conclude the present papers by drawing attention to one fact which alone would almost prove the identity of scirrhus and encephaloid, and their diversity from all other forms of growth: namely, that the primary scirrhous growth is followed by secondary encephaloid, and that in no case have any of the cancroid forms been attended with such a result. Fibroplastic, when incompletely removed, breeds fibro-plastic, generally locally, rarely at a distance. Epithelioma, in like manner, is followed by outbreaks of epithelioma: and we may fairly challenge the production of one case in which an experienced microscopist, with good glasses and a knowledge of the case, has come to any other conclusion. This fact, incontestibly proved by the researches of earnest microscopists, is not invalidated by the opposition of those who have no knowledge of the microscope, and without, it may be, either time or inclination to learn.

(*To be continued.*)

Art. XI.—*On "Placenta Previa."* By R. W. O'Donovan, M. R. C. S., Belturbet.

In giving the details of the four cases of "placenta previa" which I have met with in a practice of seventeen years, my object is to further the desire for obtaining professional statistics, and to assist with my mite the valuable records of obstetrical science.

Case I.—May, 1842. I attended Mrs. Murry, a farmer's wife, aged 40, residing three miles from me: she was the mother of several children, all of whom she gave birth to without further assistance than that of an ordinary midwife. For ten days previous to my attendance she suffered from uterine hemorrhage, constant, but not severe. When I saw her she was dreadfully blanched—the bed saturated with blood—restless, excitable, and frightened at her state. On examination, I

found the vagina full of coagula, its structure soft and dilatable; the os uteri dilated to the size of half-a-crown; the placenta, rough and rugged, covering the entire opening. As it was my first case of this variety of "preternatural labour," I plugged the vagina well, and waited for an hour, that the os uteri might become further dilated before I should introduce my hand; at the expiration of this period I found the mouth of the womb considerably more patent. I could not satisfy myself whether the placenta was placed equally over the os or not; but, having gently insinuated the points of the three first fingers of my right hand in a conical form within the lips of the os uteri, and by a careful rotatory motion gradually dilated the os, pressing my fingers at the same time steadily against the placenta, I thus, with patience, and without much difficulty, dilated the os, and at the same time separated the placenta from its abnormal position; then, passing my hand above the placenta posteriorly, I ruptured the membranes, searched for and laid hold of both feet, and rapidly drew the child into the pelvis, and delivered as speedily as possible. The child was quite blanched and dead; with a cold hand on the uterus, I induced good contraction, and forced away the placenta by external pressure; with careful bandaging and padding the contraction was kept up, and the woman ultimately did well. She suffered from the consequences of hemorrhage, viz., "tinnitus aurium" and distressing palpitations, for a long period, and, indeed, never recovered her healthy complexion. This woman died of typhus fever after three or four days' illness, in the latter part of the year 1847.

Case II.—April, 1847. I attended Mrs. M'Donald, aged 28, also a farmer's wife, living four miles from me; she was the mother of four children. I found her alarmingly exhausted, pallid, very restless; pulse 90, jerking and compressible; she stated that about three weeks previously she first perceived a small gush of blood; it then ceased for one or two days, appeared again, and so continued, with intermissions, until the last three days, when it became constant, increasing in quantity, accompanied by occasional severe cutting pains.

On examination, I found the vagina distended with large clots, and the os uteri dilated to the size of a penny; the edges soft and dilatable, the placenta distinctly felt through the opening, and the fœtal head discernible above the pubes. I introduced my hand, forming my fingers into a cone, thus gradually dilating the os, and pressing against the placenta at the same time; it separated at its posterior attachment; I then, without

difficulty, ruptured the membranes, seized the feet, and quickly delivered the child, which was dead.

In the management of this case I experienced great difficulty from the extreme excitement and nervous irritability of my patient, who plunged and twisted about in the bed, screaming in a dreadful manner, and constantly calling out, "Leave me to God!" I can never forget the scene, which was trying in the extreme. She made a good recovery, and has borne two children since, without requiring medical assistance.

Case III.—October, 1848. I was called to attend, with Mr. ——, an old apothecary, Mrs. B., aged 45, residing seven miles from me, in her fifth accouchement. In the previous December she miscarried, but from that period enjoyed good health to the third day previous to my visit, when she was attacked with slight cutting pains, which were attended with alarming hemorrhage, followed by repeated faintings; this state of matters continued until my visit at 2 p. m. I found her pale, exhausted, restless, and excited; pulse feeble and thready, with difficulty counted. The vagina was plugged with coagula, the os dilated to about the size of a crown-piece, soft and dilatable; the placenta covering the opening, distinctly felt; it was impossible, however, to say with exactness whether it was placed more anteriorly or posteriorly. Having removed the coagula, I proceeded to dilate the os, pushing before me the placenta in the manner detailed in the previous cases. Having detached the placenta, which also separated from the posterior wall of the uterus, I ruptured the membranes, seized both feet, and quickly delivered the woman. As the two previous children were dead, I felt an intense anxiety to try whether artificial breathing and warmth could restore animation, though the idea did not hold out much, if any, promise of success, as life appeared to be quite extinct. I left the mother in charge of Mr. ——, with instructions to remove the placenta, bind and pad tightly, and give her some wine; after the lapse of an hour's patient perseverance the little child began to gasp; at this moment hearing some bustle in the room where the sick woman lay, I proceeded there, and found my patient dead! the uterus distended with blood, the binder loose, and not padded; there was no external hemorrhage. The infant did well.

Case IV.—April, 1857. Was urgently called to see Mrs. F., aged 33 (residing about ten doors from me), carrying her fourth child; she had been ailing all day, but continued occupied with her usual business: a few moments before I was sent

for, sharp cutting pains came on, accompanied by a profuse flow of blood; having been put to bed, I examined her, and found the os uteri dilated to the size of a shilling, the lips soft and full, vagina soft and dilatable, placenta felt distinctly through the opening. The third case having given me painful evidence of the impossibility of one professional man affording the necessary amount of care to the parent and child, I requested the assistance of another medical man, and carefully plugged the vagina. At the close of an hour's interval, the dilating pains having continued without intermission, the plug was removed from the vagina, and was followed by a considerable discharge of blood. Dr. Wade having made an examination, and agreeing with me as to the necessity of prompt interference, I at once proceeded to dilate the os and deliver my patient in the manner adopted in the previous cases. The placenta separated from its anterior attachment; having ruptured the membranes, I found the feet presenting, and having seized them, I quickly delivered without encountering any difficulty, Mrs. F., being exceedingly gentle and easily managed; the child was alive. I removed the placenta by external pressure. Mrs. F. recovered well, and was able to nurse her child; she, however, suffered from extremely severe after-pains, which yielded to an external and internal anodyne treatment. I have found a liniment holding chloroform in suspension rubbed over the uterine region, in this and similar cases, of great advantage.

Placenta previa (beyond all question the most fearful obstetric complication that the practitioner can be called on to contend with), whether considered in relation to the child, the mother, or the character of the medical attendant, requires that the *best practice*—that which affords the greatest chance for preserving the lives of both parent and offspring—should be well engraven on the mind; for, as a general rule, in the country at least, he can seldom have the benefit of a consultation, seldom time for a moment's reflection, while the life-blood of two human beings is rapidly welling away in his presence. Doubt, hesitation, or rashness may be equally fatal to both: it is not too much to say, therefore, that a thorough knowledge of what is best to be done under the circumstances is a matter of the deepest moment—fraught with the luxury of a recovered patient's thanks, or, on the other hand, a life-long regret.

That the best practice is not as yet *un fait accompli*, the records of the profession abundantly prove. On one side, the writings

of such men as Professor Simpson, Dr. Radford, and others, are opposed to the practice and opinions of men *at least* their equals. This divergence of opinion among men of rank is liable to produce doubt and hesitation, particularly in the minds of young practitioners. Whether the results of my own experience will tend to throw any light on the subject or not, I do not pretend to say; for statistical facts, though of unquestionable importance, can only lead a certain undefined distance on the road of inquiry, because it is quite impossible to aggregate a given number of cases, where all the details are exactly similar; and equally impossible to define or describe clearly and accurately those minute differences which are at once discernible to the practical physician.

While I cannot avoid differing with the teaching of men eminent in the profession, I do so with the utmost diffidence in myself, and the greatest possible respect for them, and with the conviction that my ideas are not entirely devoid of interest, being deduced from facts.

The first stage of the operation appears to me to be that which calls for the most careful investigation, being beyond question the most tedious, most difficult, and most trying to the patient and her attendant: in its management Dr. Churchill advises that "the points of the fingers be gently yet firmly insinuated within the os uteri, and then passed between the placenta and cervix, on that side on which we believe the placenta to be narrowest." My objection here is that the action is grounded on an assumption, and that the result may turn out diametrically opposite; for it is perfectly impossible to calculate with certainty at which side the placenta is narrowest, unless, indeed, in "partial presentation," and to such a case the teaching has no reference. In my four cases it was not possible to determine with any approach to certainty whether the placenta was equally implanted over the os and cervix uteri or not; in three it was found the greatest portion was placed anteriorly; in the fourth the reverse was the fact.

The primary idea in the action being the separation of the placenta, appears to me to be also erroneous. I consider the primary motive should be the dilatation of the os and cervix uteri, and, as a consequence, the detachment of the placenta; and, acting on this view, I dilate with a rotatory motion of my fingers, pressing my fingers at the same time steadily against the placenta, and forcing it from me, as the act of dilatation proceeds. Thus three important steps in the delivery go on "pari passu"—the dilatation of the os uteri, the suppression of

the hemorrhage, and the detachment of the placenta: nor is this distinction unreal or of little importance,—time, which is all important, is saved; and every moment taken from the entire period of delivery adds considerably to the chances of a happy result.

Dr. Barnes' theory of "hemorrhagic circles" is so novel and so interesting, I shall leave its consideration to men of his own status, with one remark: if the dilatation of the os uteri be not alone the cause of the hemorrhage, but also the means of its *arrest*, as he asserts, and in which opinion I fully concur, surely sound judgment would guide us to quicken and terminate this stage of the labour as expeditiously as possible. And if the surgeon can succeed in detaching the placenta to the extent of *three inches all round the os*, or "lower polar circle," as he defines it, the necessary contraction to close the bleeding vessels, and so prevent dangerous flooding, should, I conceive, present an aperture of from three to four inches, through which the hand, if presented with tact, steadily and gently, should pass; and the hand, having once entered the cavity of the uterus, should not, in my judgment, ever be withdrawn until it is accompanied by the child: there can be no possible motive for not doing so if the feet present; and beyond all question this is the safest practice for both parent and child. If the prostration of the mother is so great as to require some moments of rest, she will thus be in the best position to benefit by it, the hemorrhage being stopped, and the child within reach of the operator's hand, without having to introduce it a second time. But if the feet do not present, the operation of turning is not in reality either difficult or dangerous while the child is suspended in the "waters;" while, on the contrary, it becomes both difficult and dangerous if attempted after the waters have been allowed to drain off, and the uterus has contracted round the body of the child.

Besides, such a practice puts the patient to the agony and suspense of two operations, the first consisting of the dilatation of the os uteri, the detaching of the placenta, and rupturing of the membranes; and the second, the re-introduction of the hand, and turning the child, if then possible, and if not, the use of the crotchet.

It is my sincere and solemn conviction that this is not a state to which a patient or her offspring should be reduced by her medical attendant. I am equally convinced that all the resources of art and scientific skill should be brought to bear to shorten the entire period of the labour. Every woman anxiously

looks forward to the moment when the doctor commences any manual operation, with an earnest expectation that he is about to deliver her. Is it a matter of no importance to disappoint her—to shock her nervous system even in the slightest degree at such a moment! In ordinary cases a very trivial shock or disappointment has been productive of the most alarming consequences—how much more should it be dreaded in cases like the present, where, from the loss of blood, the nervous system is depressed often to the lowest state of irritability!

Art. XII.—*Additions to the Statistics of Fractures.* By Dr. Oscar Heyfelder, of Munich[a].

During the years 1825 to 1854, in the University Hospital at Erlangen, there were treated 562 fractures, being an average of 18·7 per annum. The average number of the surgical patients received there every year is 634; from 1825 to 1829, inclusive, it was 450; from 1829 to 1839, inclusive, 350; from 1839 to 1844, inclusive, 650; from 1845 to 1854, 1000. For the last thirteen years the surgical clinique was under the direction of Professor T. F. Heyfelder. And out of 634 patients there were 18·7 fractures, or 1 in 34. So the proportion obtained by our statistics during thirty years does not agree with that obtained by Dr. Middledorpf[b] during three years in the Allerheiligen Hospital at Breslau; there the proportion of fractures to the surgical patients was 1 in 25.

The difference may be thus explained in some degree,—that Erlangen (22,000 inhabitants) is a much less town than Breslau (116,235 inhabitants). This hospital, therefore, admits much less surgical cases than a larger town, and especially less fractures; as well as extraordinary cases, particularly operation cases, which come to the latter from all the neighbourhood, and even from remote districts, to be treated in the University Hospital.

Of the 562 fractures, 50 were of the head, 65 of the trunk, 241 of the upper, and 196 of the lower extremities. Their

[a] [As in a former communication by Dr. Oscar Heyfelder in our pages, we altered his idiomatic style as little as possible, we feel under so much obligation to him for the trouble he must have taken to pen his observations in the English language, that we have wished to present his valuable essay to our readers as far as possible in his own words.—Ed.]

[b] Beiträge zur Lehre von den Knochenbrüchen. Breslau: 1853.

frequency, according to the different parts of the body, is as follows:—

Head.	Trunk.	Upper Extremity.	Lower Extremity.
Skull, . . . 24	Vertebræ, . . 3	Scapula, . . . 9	Femur, . . 56
Fissures of the skull, . . 5	Sternum, . . . 2	Clavicle, . . . 27	Leg, . . 62
Bones of the face, . . . 19	Ribs, ... 47	Infraction of clavicle, . . . 9	Tibia, . . 30
Diastasis, . . 2	Infraction of ribs, 11	Humerus, . . 16	Fibula, . . 26
	Pelvis, . . . 2	Radius, . . . 75	Patella, . 13
		Ulna, ... 15	Tarsus, . . 2
		Infraction of ulna, 4	Metatarsus, 2
		Fore-arm, . . 52	Toes, . . 5
		Infraction of fore-arm, . . . 5	
		Carpus, . . . 1	
		Metacarpus, . . 7	
		Fingers, . . . 21	
Total, . . 50	 65	 241	 196

The greatest number belong to the upper extremity,	241
Then follows the lower extremity, ...	196
The trunk, ...	65
The head, ...	50
Total, . .	562

This proportion agrees quite with that obtained by Middledorpf[a]. In the statistics of Malgaigne[b], the fractures of the lower limbs exceed those of the superior. In adding together the three statistics, that of mine, of Middledorpf, and of Malgaigne, we get—

Fractures of the upper extremities, . . .	1318
,, lower extemities, . . .	1314
,, trunk, ...	418
,, head, ...	155
Total, . .	3205

Thus the total statistics do not confirm the opinion of Malgaigne, that fractures of the upper extremities are more frequent than of the lower. On the contrary, we see them exceeded in the other tables, though in so trifling a degree that we may assume they are equally frequent.

[a] Ibid., pp. 21 and 144.

[b] Die Knockenbrüche Deutsch, von Dr. Bürger, p. 16. Stuttgart: 1850.

From the numbers obtained in the surgical clinique at Erlangen during the space of thirty years, the frequency of fractures of the individual bones is as follows:—

The first place belongs to the radius,	75
Second, both bones of the leg,	62
Third, femur,	56
Fourth, fore-arm,	52
Fifth, ribs,	47
Sixth, tibia,	30
Seventh, skull,	29
Eighth, clavicle,	27
Ninth, fibula,	26
Tenth, fingers,	21
Eleventh, face,	19
Twelfth, humerus.	
Thirteenth, ulna.	
Fourteenth, patella.	
Fifteenth, scapula.	
Sixteenth, metacarpus.	
Seventeenth, toes.	
Eighteenth, vertebræ.	
Nineteenth, pelvis, sternum, metatarsus.	

Middledorpf obtained a different proportion:—Ribs, both bones of the leg, fore-arm, clavicle, thigh bone, &c. And Malgaigne the following:—Both bones of the leg, ribs, humerus, clavicle, thigh bone, &c. Of the fractures of the bones of the head, that of the parietal bone and the upper jaw are the most frequent; in the trunk that of the ribs; in the upper extremities that of the radius; in the lower extremities that of both bones of the leg.

Middledorpf having observed only one infraction (infractio ulnæ, in a lad of 14), we have 29:—

The clavicle,	9
The ribs,	9
The cartilage of the ribs,	2
The fore-arm,	5
The ulna,	4
Total,	29

They all occurred in young individuals. One case is remarkable for the uncommon disposition to infraction. A boy, six years old, of a tender constitution and slight bones, fell down and got an infraction of the clavicle. On the 28th April of the following year he fell again, and suffered from infraction of the right ulna, nearly in the middle of the bone. On the 26th July

the boy fell for the third time, when he had an infraction of the radius higher up than that of the ulna.

Fractures of the Head.—The fractures of the head prove interesting to the surgeon, inasmuch as they affect either the skull as the osseous covering of the brain, or the face as the hard base of the human features; not inasmuch as the individual bones are more or less frequently broken. Therefore, they may be considered in two divisions—as *fractures of the skull*, and *fractures of face.* The number of the fractures of the skull is 24; thus they are the $\frac{1}{23}$rd part of all the fractures, or if we count the fissures likewise, the $\frac{1}{19}$th part. Out of 15, the details of which are known to me, there were 5 of the parietal bone, 4 of the os sphenoideum, 3 of the frontal, 2 of the os temporum; in 1 case the sphenoid, the frontal, the os parietal, and the nose bones, were broken; and in another, fractures and fissures went through the sphenoidal, the parietal, the os temporum, the ossa nasi, and the upper jaw.

The fractures of the bones of the face were 19 out of 562, so they are $\frac{1}{28}$ of the total, of 15 of which I know the exact history; 5 were of the upper jaw, 4 of the under, 3 of the nose bone, 1 of the zygomatic, 1 of the vomer.

The lower jaw, which was broken four times, constitutes $\frac{1}{140}$ of the total number; in Middledorpf's statistics, $\frac{1}{451}$; in Malgaigne's, $\frac{1}{91}$; giving a mean of $\frac{1}{92}$. Thus in our statistics the fracture of the lower jaw is extremely rare, and does not at all confirm the assertion of Malgaigne, that it is the half of all the fractures of the face bones. With us it is only one-fifth of them.

Fractures of the Trunk.—*Fracture of the Vertebræ* was observed thrice out of 562 cases, so it forms $\frac{1}{187}$; according to Middledorpf, $\frac{1}{45}$; according to Malgaigne, $\frac{1}{168}$, giving a mean of $\frac{1}{133}$ of all fractures.

Fracture of the Sternum is to be found only twice in my statistics, therefore, $\frac{1}{281}$; with Middledorpf, $\frac{1}{89}$; Malgaigne had, out of the 2328 cases of the Hotel Dieu, not one; Lonsdale, 2 out of 1901, or $\frac{1}{950}$, or, in the mean of the three statistics, $\frac{1}{440}$. The two cases observed in the clinique of Professor Heyfelder are worth recording.

Case I.—K. B., thirty-three years of age, falling from a high tree, on the 28th February, 1844, on his back, suffered from a transverse fracture in the upper third of the sternum; a fracture of the processus spinosus of the third, fourth, and fifth dorsal vertebræ, a fracture of the lower end of the left radius, and also of the heel on the same side. The man complained very

much of the breast in the region of the fractured vertebræ, and of the left tarsus. He was bled to fourteen ounces, fomentations applied, and twenty-four leeches over the tarsus.

On the 3rd of March a bandage was put on the arm; on the 5th one on the foot, which, four weeks after, could be removed, a close examination proving that the fractured bones were completely united.

On the 11th of April the man could sit some hours out of bed; on the 15th he could walk with crutches. On the 10th of May he was dismissed cured.

Case II.—B., a man aged 40, after having gone through a typhoid fever, was attacked with necrosis of the sternum, combined with intolerable pain, and abscesses originating in the neighbourhood, with denuded portions of the bones, and the exfoliation of small sequestra. After some weeks, crepitation was observed by the patient and the surgeon, and a transverse fracture through the upper third of the sternum was detected. No accident had happened, and the mere movements of respiration had evidently sufficed to rupture the bone, friable and thin in consequence of the necrotic disease. Diastasis of the fragments was to be observed at every respiration. No disease of the lungs existed.

Professor Heyfelder, called in consultation, made a resection of the necrotic part of the sternum, by means of the osteotome, the chain saw, and Velpeau's scissors, the bone crumbling like freestone under the instruments. The piece removed was more than two inches long, and one and a half broad. The wound was covered with cerate spread on linen; the patient kept in a lateral position lying on the side.

The man recovered in a proportionately short time, the wound uniting by a hard resistant cicatrix, two little fistules remaining, discharging a healthy-looking matter. When they closed, an inflammation of the right sterno-clavicular articulation took place, which, some weeks after, ended in the formation of abscesses and the spontaneous elimination of the cartilage of the external end of the clavicle. The patient recovered entirely, and is able to do every work in the field[a].

Fractures of the Ribs were observed in but 47, $\frac{1}{12}$ of the total; according to Middledorpf, $\frac{1}{5}$; according to Malgaigne, $\frac{1}{10}$; in the mean, $\frac{1}{9}$ of all fractures.

One of the cases observed in the hospital at Erlangen is remarkable for the great number of broken ribs.

[a] T. F. Heyfelder, Resections und Amputations, page 120. Breslau: 1855.

L. L., a labourer, thirty-six years old, was overthrown by the giving way of a bank of earth. He was brought to the hospital insensible, where he died some hours afterwards. On post-mortem examination the following fractures were found: on the left side the third, fourth, fifth, sixth, seventh, eighth, and ninth ribs, were broken in two places; the tenth, eleventh, and twelfth singly: at the right side were double fractures of the second to the ninth ribs, and a single one of the tenth and eleventh; moreover, the ulna was broken in the middle of the shaft, and the olecranon was broken off.

This individual had thirty-seven fractures, including twenty broken ribs. The symmetrical distribution of the fractures between the two parts of the thorax, and the participation of all the ribs, with the exception of the first, prove the equal influence of a mighty destroying power.

Fracture of the Pelvis.—I find 2 out of 562, or $\frac{1}{281}$; according to Middledorpf, $\frac{1}{89}$; to Malgaigne, $\frac{1}{236}$; in the mean, $\frac{1}{202}$ of the entire.

Fractures of the Upper Extremities.—*Fracture of the Clavicle*, 27 out of 562, proves to be $\frac{1}{20}$ according to my statistics, or, if we add the infractions, $\frac{1}{13}$; according to Middledorpf, $\frac{1}{9}$; to Malgaigne, $\frac{1}{10}$; giving a mean of $\frac{1}{13}$, or $\frac{1}{11}$ if we add the infractions of this bone.

Of the *Fractures of the Scapula* I report 9 cases: they represent $\frac{1}{69}$ of all the fractures in my table; $\frac{1}{41}$ in that of Middledorpf; $\frac{1}{3889}$ in Malgaigne; $\frac{1}{230}$ in the mean.

Out of the 9 *Fractures of the Shoulder-blade*, 3 were of the acromion; 6 of the body of the scapula.

Fractures of the Humerus, in 16 out of 562, form $\frac{1}{35}$ of the total; according to Middledorpf, $\frac{10}{56}$; to Malgaigne, $\frac{1}{5}$; or in the mean, $\frac{1}{17}$.

The *Fractures of the Forepart of the Arm* are, 142 out of 562, or, the infractions added, 151 out of 562, $\frac{3}{7}$ of the total sum. Of this number 52 belong to both bones; consequently, the *Fractures of the Antibrachium* form $\frac{1}{11}$ of the total, quite agreeing with the observations of Middledorpf and Malgaigne, of which the first fixes them to be $\frac{1}{10}$; the second, $\frac{1}{11}$ of all fractures.

The ulna breaks more rarely; for it alone 15 times out of our 562 cases; 9 times out of 243, according to Middledorpf; 35 times out of 2328, according to Malgaigne. Thus the fractures of the ulna form $\frac{1}{37}$, Heyfelder; $\frac{1}{27}$, Middledorpf; $\frac{1}{61}$, Malgaigne; giving a mean of $\frac{1}{41}$ of the total. 9 of my 15 cases are *Fractures of the Olecranon;* 6 of Middledorpf's; and 9 of

Malgaigne's 38. The proportional number taken of the three tables ($\frac{1}{18}$, Heyfelder; $\frac{1}{40}$, Middledorpf; $\frac{1}{238}$, Malgaigne) is $\frac{1}{126}$.

In one case we got a union of the fragments by fibrous tissue of one inch broad; in one, the case of a married woman seventy-two years old, the union was accomplished by callus and ossification after seven weeks, but only after two months were the movements restored to the articulation.

The *Radius* alone I find broken 75 times, $\frac{1}{7}$ of the total; Middledorpf, $\frac{1}{11}$; Malgaigne, $\frac{1}{14}$; in the mean, $\frac{1}{11}$. Out of my 75 cases, the fracture concerned the anterior third of the bone 56 times; out of the 23 of Middledorpf, 19 times: consequently, the fractures of the anterior third of the radius are to those of the other three-fourths of the bone as 75 to 98, or 3 : 4. Of all fractures, those of the anterior third form $\frac{1}{10}$ according to my table; $\frac{1}{13}$ to that of Middledorpf; and $\frac{1}{12}$ in the mean.

Fracture of the Carpus is to be found once; of the metacarpus, 7 times. Middledorpf saw the latter 10 times out of 286 cases; and Malgaigne, 16 times out of 2328. Thus they represent $\frac{1}{80}$ of the total, according to me; $\frac{1}{28}$, to Middledorpf; $\frac{1}{143}$, to Malgaigne; $\frac{1}{84}$ in the mean.

Fractures of the Fingers, 21 out of 562, form $\frac{1}{27}$ with me; $\frac{1}{16}$ with Middledorf; $\frac{1}{51}$ with Malgaigne; $\frac{1}{32}$ in the mean.

Fractures of the Lower Extremities.—The *Fractures of the Femur*, 56 out of 562, are $\frac{1}{10}$ according to my statistics; $\frac{1}{6}$, to Middledorpf; $\frac{1}{7}$, to Malgaigne; something more than $\frac{1}{7}$ in the mean.

One case deserves special mention.

A man, twenty-four years old, entered the University Hospital on the 31st of March, with a simple transversal fracture of the femur. On the twelfth day a plaster bandage was applied. On the 14th of May, or the forty-sixth day after his reception into the hospital, he was attacked with small-pox, which passed away mildly and regularly.

It was astonishing, in removing the bandage, in nine weeks after the accident, to find the fragments not united, though in no way inclined to dislocation. One must suppose the attack of small-pox had interrupted the union, at that period already advanced to a certain degree. By means of the plaster bandage the union was finished in four weeks.

Fracture of the Patella is rare, according to all statistics. Middledorpf saw 3 out of 313; Malgaigne, 45 out of 2328; I saw 13 out of 562. They form, consequently, $\frac{1}{104}$ in Mid-

dledorpf's statistics; $\frac{1}{52}$ in those of Malgaigne; $\frac{1}{93}$ in mine; $\frac{1}{60}$ in the mean.

Two cases of badly united transversal fracture of the patella were presented in the clinique.

A girl, aged 25, having endured a fractured patella, was treated by a bone-setter, who allowed her the use of the foot after four weeks. The fragments were united by a ligament of some inches in length. The girl happened to fall again, and the new-formed ligament was once more destroyed. This time she was received into the University Hospital at Erlangen; the leg was laid upon an inclined plane; sixteen days after, put into the apparatus of Dupuytren. Two months after, the girl was dismissed; the fragments were united by a new and shorter fibrous tissue, having on the exterior edge a thin osseous ridge.

A man, aged 40, entered the clinique, who a year previously had undergone a transverse fracture of the patella. He also had been treated by a bone-setter, who, in order to keep the fragments together, had surrounded the patella with an iron ring. The upper fragment, forming the third of the bone, was united with the lower one by a fibrous tissue, two inches long in the outstretched position of the leg. The movements of the limb were not hindered, except the power of going downwards.

The *Fractures of both Bones of the Leg* amount to 118 in my table, and so they form, quite agreeing with Malgaigne's observations, the fourth part of all fractures. Most frequently, both bones break together,—62 times among our 562 cases, which proves that the fractures of the leg form $\frac{1}{9}$ of all fractures, according to my statistics; $\frac{1}{8}$, to Middledorpf; $\frac{1}{4}$, to Malgaigne; $\frac{1}{7}$, in the mean.

Malgaigne says that fractures of the fibula exceed those of the tibia a great deal; my experience shows the contrary, the former amounting only to 26; the latter, to 30. The latter represents $\frac{1}{18}$ in my table; $\frac{1}{40}$ in that of Middledorpf; $\frac{1}{80}$ in that of Malgaigne; $\frac{1}{16}$ in the mean. That of the fibula are: $\frac{1}{21}$, Heyfelder; $\frac{1}{34}$, Middledorpf; $\frac{1}{22}$, Malgaigne; $\frac{1}{25}$ in the mean.

Fractures of the Tarsus are very rare, at least they are seldom recognised and noticed. I find 2; Middledorpf, 2; Malgaigne, 6; in the mean they form $\frac{1}{30}$ of the total. That of the *Metacarpus* is rarer yet: in my table we count 2; in that of Middledorpf, 3; of Malgaigne, 3; so that in the mean they are $\frac{1}{400}$ of all fractures.

The Toes I found 5 times broken out of 562; Middledorpf, 4

times among 313; Malgaigne, 10 times among 2328; consequently, they are in the mean $\frac{1}{170}$ of the total.

Following the proportional numbers of the three sets of statistics, the frequency of breaking, as regards the different bones, is the following:—

Both bones of leg,	$\frac{1}{7}$	Tibia,	$\frac{1}{46}$
Femur,	$\frac{1}{7}$	Patella,	$\frac{1}{66}$
Ribs,	$\frac{1}{9}$	Metacarpus,	$\frac{1}{54}$
Fore-arm,	$\frac{1}{10}$	Mandibula,	$\frac{1}{92}$
Radius,	$\frac{1}{11}$	Olecranon,	$\frac{1}{126}$
Clavicle,	$\frac{1}{13}$	Vertebræ,	$\frac{1}{133}$
Humerus,	$\frac{1}{17}$	Bones of the Toes,	$\frac{1}{170}$
Cranium,	$\frac{1}{19}$	Pelvis,	$\frac{1}{202}$
Fibula,	$\frac{1}{25}$	Scapula,	$\frac{1}{230}$
Bones of the Face,	$\frac{1}{25}$	Tarsus,	$\frac{1}{300}$
Bones of the Fingers,	$\frac{1}{32}$	Metatarsus,	$\frac{1}{400}$
Ulna,	$\frac{1}{41}$	Sternum,	$\frac{1}{440}$

ART. XIII.—*Cases in Midwifery from Dispensary and Private Practice. With Remarks.* By T. PUREFOY, M. D., &c., Lucan.

EIGHT CASES OF ARM PRESENTATION.

CASE I.—IN this case the fore-arm and cord presented without the os externum for a period of fifteen hours before the patient was first visited, when she was found weak and exhausted, and without any labour pains. There were tenderness of the abdomen, tympanitis, thirst, fever, with a dry and heated state of the vagina. Delivery was easily effected by turning the child; yet all the bad symptoms increased progressively until the fourth day, when the patient died.

CASE II.—Mrs. H., in labour during thirty hours before visit: young, healthy, and well made. The left arm is completely protruded at the os externum, and much swollen, whilst the shoulder is firmly impacted at the brim of the pelvis. The pains are powerful; but there are not any alarming constitutional symptoms present. An opiate was given, and, when its effects were manifested, an attempt was made to turn the child, but in vain, as the introduction of the hand was prevented by violent uterine contraction; the opiate was repeated, sixty drops of the acetum opii having been given within the lapse of two hours. Sound sleep was induced; the operation again cautiously undertaken, which proved at

once difficult, tedious, and very painful to the patient, in consequence of continued active uterine contraction resisting the movements of the hand in utero, and so prolonging the operation for a period of nearly two hours. No unpleasant symptom followed until the third day, when indications of cerebral apoplexy arose, which yielded to free bleeding from the arm, purgatives, and the use of mercury.

Case III.—Mrs. H. again attended, under precisely similar circumstances: delivered by turning the child, which was still-born, as in the first instance, a considerable time having elapsed before she had assistance.

Case IV.—Mrs. H.—Arm presentation a *third time*. Thus, in three successive labours this unfortunate woman had an arm-presentation; in each the child was still-born, and probably might have been saved if she had timely assistance given her.

Case V.—Mrs. K., a labourer's wife, eighth labour; ill ten hours: left arm presenting, and protruded nearly as far as the shoulder: abdomen tympanitic: pulse small and rapid: patient complains of unremitting pain; expulsive efforts frequent, unavailing, and exhausting. In order to soothe and sustain the patient, allay fruitless uterine efforts, and so avert impending evil, thirty drops of the acetum opii were at once given: and as this dose was insufficient, twenty drops were shortly afterwards administered, when the child was turned without any difficulty, and subsequently expelled by the natural efforts; the placenta followed in a short time. The uterus contracted well, yet the patient seemed to be scarcely relieved from her sufferings, and continued to complain, for at least an hour after delivery, of severe pain just below the epigastrium: after this period it was less complained of, but pain at the occiput became troublesome. After the lapse of a few hours the patient slept a little, and was quieter, but during sleep had involuntary tremors of the left arm and leg, which would cease upon sprinkling the face with cold water, and applying a stimulus to the nostrils. The bowels were duly acted upon by aperients, but the weak and exhausted condition of the poor woman completely forbad the employment of more active treatment. She lingered for two days in this state, made little complaint, and suddenly expired on the third day, after having discharged a large quantity of blood from her stomach, in the act of vomiting.

No post-mortem examination could be obtained.

Case VI.—A. M., a labourer's wife, in labour for several hours, arm presenting, and the shoulder wedged in the brim

of the pelvis, the waters having been drained off for some time. An opiate having been given, the child was turned, and delivered with much difficulty. The placenta was duly expelled; slight inflammatory symptoms followed, but yielded to a mild antiphlogistic treatment.

Case VII.—A poor woman who had been in labour for a considerable time (exact period not known) sought for medical aid when nearly in a state of complete exhaustion. The arm presented externally, and was much swollen; however, turning was effected without delay or trouble; yet symptoms of low inflammation speedily followed, and the poor sufferer sank exhausted in a few days.

Case VIII.—Mrs. F., aged 49; tenth child, the youngest aged five years. During these five years she has suffered much from chronic rheumatism, which completely deprived her of the use of her limbs, so that during pregnancy she moved about by the aid of crutches. Labour had commenced some hours before visit; the os uteri is now fully dilated; cord prolapsed and pulseless; shoulder presenting. A full opiate having been given, the child was in due course turned, and easily delivered.

This lady made a good recovery; remounted her crutches in good health and spirits, and, for aught I know, may have again increased the number of her offspring.

REMARKS UPON THE PRECEDING CASES.

In cases of arm presentation assistance must be given early and judiciously, in order to secure the life of the infant, and to rescue the parent from all the dangerous consequences of impracticable labour, when unduly protracted. I mean impracticable through the mere natural efforts, since I have never witnessed an instance of "spontaneous evolution," in which the position of the child became altered without any artificial aid, so as to be subsequently expelled by the unassisted uterine efforts. In Case I. the necessary aid was not procured until the labour was so long protracted as to induce fatal exhaustion, and thus predispose the patient for the fatal uterine inflammation, which, if it did not precede, immediately followed upon delivery.

The second case affords a remarkable instance of an arm-presentation occurring in three successive confinements. Now, if allowed to speculate, or to indulge in hypothesis, in such matters, may we not suppose that this woman, in consequence of having her mind unduly occupied with the thoughts of her misfortune in having a cross-birth, and losing her child, was

thus, through the operation of a strong mental impression, rendered more likely again to become the subject of this departure from the ordinary course of nature?

Be this as it may, we see that where preternatural labour once occurs, it is likely to happen again, and I doubt not it might be proved from a registry of such cases, that preternatural labour has occurred—in the majority of instances—more than once in the same individual. The usual practice of giving a full opiate was followed here, and although profound sleep and stertorous breathing were induced, yet most powerful uterine action was aroused upon the introduction of the hand, the uterine contractions continuing, during the efforts made to turn the child. What advantage, then, in giving opium to arrest uterine contraction, if this contraction can be excited in a powerful degree, even whilst the patient is evidently narcotised? Although I would not rashly proceed to turn during active uterine contractions, without having previously endeavoured to allay uterine action by the use of opium, or of other appropriate means, as bleeding, or the use of tartar emetic; yet experience proves, that whilst the nervous system generally is brought under the influence of opium, the organic contractility of the uterus (in many cases) will be found in active operation. There can be no doubt as to the tranquillizing influence of opium upon the cerebro-spinal nerves generally. And in this way the opiate will obviously, though in an indirect way, facilitate the operation of turning. But, from the fact here stated, it would seem that the uterine nerves, which are not altogether supplied from this source, but also from the sympathetic nerves, are not equally under the sedative influence of opium. Hence the patient may be narcotised, and yet, the organic sensibility of the uterus remaining, it may be excited to make continued and powerful expulsive efforts, by the powerful stimulus of the hand introduced within its cavity.

We know that in cases of profound apoplexy the heart will continue to act for a considerable time, and that the functions of other vital organs will continue for some time unimpaired also, under such circumstances,—a fact explained by considering the source from whence these organs receive their nerves. Whilst some authors recommend opium as a remedy in uterine hemorrhage occurring during child-birth, Dr. Beatty states that opium will cause flooding if given at this period, by preventing efficient uterine contraction. All accoucheurs agree in opinion, that this drug may be used with great benefit during the progress of, and subsequent to, the

completion of labour. Since, then, opium is an agent mighty to do good or evil, it is most important that we should have established data to guide us in the use of this medicine during the progress and after the completion of labour.

During the progress of labour opium may be advantageously employed to soothe the system, allay morbid irritability, suspend weak, inefficient, and harassing pains, which tend merely to weary the sufferer and induce exhaustion, being clearly indicated by their inefficiency in advancing labour, and their efficiency in producing restlessness and exhaustion. A few minutes' sleep, even artificially induced under such circumstances, may serve to bring a lingering and hazardous labour to a speedy and favourable termination.

Violent retching, colicky pains of the bowels, or similar accidental symptoms which tend to interfere with the natural progress of labour, may also find in opium an appropriate remedy.

Uterine hemorrhage occurring during the progress of labour can seldom, if ever, be appropriately treated by opium alone. Extreme exhaustion, induced by flooding, at any period of labour, may call for the free use of this medicine; but it is to be ever borne in mind, that here we use this medicine as a remedy for exhaustion, not as a remedy against hemorrhage; not to prevent loss of blood by flooding, but to avert the imminent danger consequent upon excessive loss of blood.

Hemorrhage coming after the birth of the child, before the complete separation and expulsion of the placenta, or after its removal, and whilst the uterus is yet enlarged and imperfectly contracted, requires great skill and promptness of action to arrest it successfully. I do not think that opium may be safely relied on in such cases. Efficient uterine contraction is the only remedy upon which we may rely for safety, and we dare not trust to opium to effect this. It has been stated that post-partum hemorrhage is often induced and kept up by morbid irritability and inefficient contraction of the uterus, evils to be remedied by the anodyne effects of opium. This state of things is indicated by frequent returns of very distressing pains, faintishness, and the discharge of clots and fluid blood. I have fairly tested the use of opium here; it failed in its anticipated results so entirely, that I could not feel justified in again pursuing a similar plan of treatment. Doubtless, flooding of a very formidable character does now and again occur, apparently as the result of undue irritability, and consequent irregular and inefficient action of the uterus.

But bearing in mind the axiom, that efficient uterine contraction is the remedy for undue uterine hemorrhage occurring after delivery, I prefer the following plan of treatment: the keeping up well-directed steady pressure with the hand over the uterus from above downwards, in the direction of the cavity of the pelvis, if need be, for hours; free exposure to cold air; the application of cold water in the usual way, aided by the infusion of ergot of rye in some cases, and, if these fail, the introduction of the hand, and emptying the uterus of clots, may be indispensable.

From these brief remarks it would appear that opium is useful, first, at the commencement, and during the progress of labour; secondly, after the birth of the child; and thirdly, after the expulsion of the placenta. It is a fit and useful agent in quieting what are named "spurious or false pains," often affording prompt relief of unavailing suffering, and promoting directly the favourable progress of labour.

In the excessive exhaustion which invariably follows upon immoderate loss of blood, it acts most favourably, by quieting restlessness and anxiety, and inducing sleep, so necessary to the preservation of life under these circumstances.

From the fifth case we learn the very important lesson, that the effects of labour upon the general system, rather than its particular stage or duration, should guide us in the all-important decision as to when we are to use active interference. Here we find a labour of only ten hours' continuance, accompanied by alarming symptoms, which distinctly forebode the approaching fatal result. We further learn that the progress and termination of every case of labour will be much influenced by the state of the patient's health previous to her confinement. Doubtless, this poor woman was in ill health previous to the occurrence of labour. I have ever found the "epigastric pain," so distressing in this instance, to be a formidable symptom, and have known it to precede fatal convulsions; in this case it would appear to have indicated hyperemia of the mucous membrane of the stomach. The transference of pain to the occiput, probably the result of congestion at the base of the brain, was an unusual occurrence, indicating the strong tendency which exists during the puerperal state to the formation of local congestions, often fatal in their issue. The condition of this patient from the first visit was such as to contra-indicate any very active interference after delivery had been completed; due attention was paid to the state of the bowels, and an endeavour made to support the strength by appropriate treatment.

The very favourable termination of the eighth case was more than could have been anticipated, in considering the crippled and helpless condition of the patient. However, the capacity of the pelvis having remained undiminished, the rheumatic affection of the joints opposed no hindrance to the progress of labour, nor in anywise interfered with the favourable progress of her confinement.

As I have had much more ample experience in the use of opium as an anæsthetic agent in the practice of midwifery, than of chloroform—its rival in the field of obstetric science—I shall not venture to trespass upon the readers' patience further than to state that I believe the latter to be an agent of vast importance in the treatment of such cases as I have just alluded to, and perhaps under certain circumstances to be preferred; but that I am not yet so fully convinced of its superior efficacy as to make it a substitute for, or prefer its aid to, that of opium in practice generally.

Art. XIV.—*Lithotomy Simplified.* By Josiah Smyly, A.B., Surgeon to the Meath Hospital.

I have been so pleased with the result of the operation for removing the stone from the bladder, advocated by Mr. Allarton, that I have been induced to publish the following case as a proof of the simplicity and safety of it.

I would recommend the "median incision" in many cases to which lithotomy (by the lateral incision) or lithotrity are now considered peculiarly suited. Children have been cut for stones so small that the minute foreign body has been swept out with the first gush of urine, and escaped unnoticed; it is unnecessary to say with what facility such stones could be expelled through an opening in the membranous portion of the urethra; but should the surgeon, previously to operating, be unable to measure the size of the stone, and upon opening the urethra find it too large for expulsion, he will, owing to the dilatability of the neck of the bladder, have no difficulty in introducing a lithotrite and breaking the stone in fragments.

Lithotrity, so suited to the adult, is not even in the most healthy person, and under favourable circumstances, free from danger. Fragments of the broken stone occasionally become impacted in the bladder or in the urethra, and excite inflammation in these structures, or, by penetrating them, may give rise to extravasation of urine; and not unfrequently, after the

mischief has been done, an incision is made to extract a fragment through which, if it had been made in the first instance, the whole of the detritus might have been removed.

Again, many cases now judged unfit for lithotrity from enlargement of the prostate gland, or from chronic cystitis, or from a constitution broken down by long-continued suffering, might be relieved of a large stone at one sitting, by lithotrity performed through a "button-hole" opening in the perineum, the detritus being either washed out through a large canula, or extracted by a narrow-bladed forceps.

When the patient is under the influence of chloroform, the pain of the small incision is not to be taken into account, and the inconvenience of it is more than counterbalanced by exemption from the preparatory treatment of dilating the urethra, to enable it to admit the lithotrite, and also by the ease with which fragments can be expelled or extracted through an opening in the perineum, instead of having to pass along the whole length of the urethra.

The following case is one in which lithotrity could not be practised, as the patient had organic stricture of the urethra of long standing, and which was so closely contracted as to admit but a very small-sized instrument: the patient was a bad subject for lithotomy; his having the stricture decided me in making the "perineal section."

Meath Hospital.—August, 1858. Michael O'B., aged forty-four years, a plasterer; muscular, rather fat; florid complexion. For the last fifteen years he has had symptoms of stricture of the urethra, for which he has sought relief at various times, at different hospitals and dispensaries.

Fourteen weeks ago he was suddenly seized, when making an exertion, with violent pain referred to the neck of the bladder, accompanied by frequent desire to pass water. He was admitted into an hospital in the city, but dismissed again in a few days, as the nature of his case was not discovered. I mention this because there was obscurity about it, and it was not until after frequent examination with a silver catheter, and having often washed out the bladder with tepid water to relieve the chronic cystitis, that I at last got faint indications of the presence of a stone.

August 15th. The sensible signs of the existence of a stone are more distinct; it seems to be small and impacted at the neck of the bladder.

August 20th. Assisted by my colleagues, I introduced Syme's grooved sound into the bladder, and having the fore-

finger of my left hand in the rectum, with a French bistoury in my right, the back towards the rectum, I plunged its point down to the staff entering it into the perineum half an inch in front of the anus, and, carrying it forwards, made an incision to the extent mentioned, viz., half an inch: on withdrawing the knife I introduced a long probe into the bladder along the groove of the staff, which was then withdrawn: the left forefinger, being now disengaged from the rectum, was well oiled; I very gradually insinuated it into the bladder, and was surprised at the facility with which the prostatic portion of the urethra yielded to steady pressure. I now felt the stone, and, judging that it was quite too large to come out without assistance, I grasped it with a small forceps and commenced extraction; not finding it advancing, I enlarged the wound towards the left side, and in so doing unfortunately laid open an artery, which bled pretty freely. The stone was then got out with ease: it was of a prismatic shape, and measured one inch and a half in its longest, and one inch in its shortest diameter, it weighed, when perfectly dry, half an ounce. The bleeding was soon controlled; the "canule a chemise" was introduced through the wound; and the patient carried to his bed. One hour after the operation he had a rigor, and was given an opiate. I should have mentioned that my patient was under the influence of chloroform, and unconscious of suffering pain.

21st. The canula was removed.

22nd. No unfavourable symptom. The urine flows freely by the wound; the patient was changed to another bed.

September 3rd. The urine flows partly through the penis; no doubt the existence of the stricture has prevented its coming through the urethra before this.

7th. Commenced treating the stricture by leaving a gum-elastic catheter in the urethra; No. 5 was firmly grasped by the stricture.

18th. The patient has been out of bed for some days: he feels so well that he has asked permission to leave the hospital and return home.

Dismissed cured, twenty-ninth day after the operation.

I cannot conclude this case without again acknowledging my obligation to Mr. George Allarton's valuable and important pamphlet, entitled, "Lithotomy Simplified."

Art. XV.—*Remarks on the Separation of the Retina from the Chorioidea.* By Dr. A. von Graefe. Translated from the German[a] by James G. Hildige, M. D.

The separation of the retina from the chorioidea by fluid has been a long time known in ophthalmology, and described under the most varied names, such as "retina tremulans," "hydropisie chorioideenne," "sous-retinienne," &c. Indeed, when a high degree of this disease is developed, it is not necessary to have recourse to the ophthalmoscope in order to perceive the wavy folds of the retina pressed forward in the posterior part of the eye; but it was this instrument which first enabled us to detect the more trifling grades of the disease, and which gave us an insight into its nature.

When the separation is partial, the inferior part of the bulb is included in it, to which I have found only four exceptions. In one, the sac lay directly external to the optic entrance, in two others it lay superior and external, and in another it lay almost superior; in two of these cases the disease was caused by an injury. The separation, when it progresses, extends in all directions, commencing at the inferior part of the sac which the detached retina forms; it seldom extends internally and superiorly until the latest period of the disease, in which directions I have often found the retina still adherent, even when all the other parts were detached, and stretched in a funnel-shaped fold from the entrance of the optic nerve in the direction of the ora serrata. In this manner is explained, also, how the small degree of sensibility to light which such patients still possess refers to the external and inferior part of the field of vision.

The appearances which the patient remarks at the commencement of the disease are the following, which are present in most cases:—A tolerably well-defined dark cloud is formed in the superior part of the field of vision, without the slightest sensation of pain; objects seen by the patient appear bent, or oblique or crooked, throughout the whole field of vision, but particularly at its edges; sometimes it is only a single part of objects which presents an unnatural form or curve. The black cloud develops itself quickest inferiorly, and reflects in the greater number of cases a blood-red appearance, which in a few days becomes yellow, and then loses its colour altogether: in some patients, however, the original colour remains. The

[a] Notiz über die Ablösung der Netzhaut von der Chorioidea. By Dr. A. von Graefe.

dark appearance usually reaches its utmost limits in a few days; but when the course of the disease is protracted for a considerable period, it then happens that it proceeds forwards intermittently, with periods of quiescence between each step. When the middle portion of the retina is spared, the power of vision is tolerably well preserved. I have seen patients with exquisite forms of this disease, who, with considerable restriction of the upper portion of the field of vision, were in a state to read the finest print, but as soon as the parts of the retina round about the optic entrance were included in the separation, all power of recognition failed, and the sensibility to light became totally destroyed. When the superior border of the sac infringes on the entrance of the optic nerve, the state of vision is then very varied: we find sometimes in this case sharp sight in the centre of the field of vision, when the neighbourhood of the macula lutea is intact, even when the parts neighbouring on the inferior border of the optic entrance are detached. In most of such cases, however, as the superior border of the sac generally lies horizontal, the macula lutea is also implicated, or, on account of its contiguity, is drawn in, in the secondary alteration (which I shall describe presently). Accurate perception is then destroyed, and the patient, when he wishes to use the affected eye, directs the axis of vision not *at* the object, but *over* it, and hemiopia takes place because the superior half of the field of vision fails. It frequently happens that, under the above-mentioned conditions, only a weak degree of vision is present externally and inferiorly, and this is explained either by the great extent of the sac on both sides of the optic entrance, or by the further advanced secondary alteration.

I have often observed cases in which the retina was detached close under the optic entrance and at both sides of it as high as the superior part; but where a certain portion, exactly over the optic entrance, was still adherent, there was then still present a weak degree of vision, which totally fails when the retina is altogether detached from about the optic entrance, although it may be adherent in considerable extent at its periphery, and present apparently normal texture. Absolute amaurosis can, however, be also present on account of the secondary alteration, even when the whole of the retina in the neighbourhood of the optic entrance, and the half of the superior part, is adherent. This occurs, comparatively speaking, very seldom, or only when atrophy of the bulb is present. I believe it to be necessary that these facts should be pointed out, because they are not without importance, in respect to the con-

veyance of the nervous impressions in the direction of the optic entrance.

The next question which interests us in a physiological point of view is, whether the detached retina be perfectly dead, with regard to its specific sensibility. It appears to me that this is not the case in the first period of the disease, for the sensation of a dark cloud, or of a red appearance, corresponding to the seat of the disease, is palpable proof that a susceptibility to impression yet remains. At a later period the detached retina loses all sensibility to either external or internal irritation, so that the patients declare they have no longer the sensation of dim vision, but that they have no vision whatsoever. I have never seen a detached retina at an advanced period of the disease recover its sensibility; so that the unmistakable improvement which results from treatment is by no means to be attributed to alteration in the detached parts of the retina, but solely to alteration in the neighbouring parts. The appearance of crooked and oblique vision is explained partly by the secondary alteration in the retina, and partly by the detachment itself. The first refers to the frequently occurring metamorphosis in the whole extent of the field of vision; the latter, on the other hand, to the exquisite optical delusions corresponding to the boundaries of the sac, by which objects appear broken off in the middle, or vanishing and reappearing in all directions, bent in a serpent or zigzag form. This arises, I believe, from the sac lying before parts of the retina which are still capable of conveying the nervous impressions. The light passes through the sac, takes the colour of the fluid which is contained in it, and, according to the alteration of position of the same, is refracted in a very varied, and naturally in a very irregular manner.

The retina is distinguished objectively by the blue or grayish-blue light which is reflected from it, but particularly by the broken appearance of the vessels as they are shortened and elongated during the movements of the eye. One can see at all times, by attentive examination, the folds of the membrane, and indeed very varying fluctuation or tremulous movements, according to the extent of the disease. The colour is also exceedingly varied, according to age, individual circumstances, and the manner of illuminating the eye. I have only seen detachment of the retina three times of a blood-red colour. In very old cases the sac is sometimes perfectly colourless, and distinguished only by the obliterated vessels, which then resemble fine black lines, presenting here and there a sort of bent or broken appearance. The boundary line of the sac is

mostly horizontal, or directed from outwards and upwards, inwards and downwards, on which account the external part of the field of vision is, comparatively speaking, in considerable extent, preserved. Exceptions from this, however, occur tolerably often, and of such a kind that the boundary line represents a curve sunk in the middle and raised up at both sides, like the profile of a saddle. This occurs frequently, and has been already pointed out above, when the separation has reached the optic entrance, which sets a mechanical obstacle to its further progress. It then rises up at both sides, whilst that portion lying immediately over the optic nerve remains intact. I believe that its limits are perfectly sharply defined towards the adherent parts of the retina, and only appear sometimes variable and uncertain on account of the hanging over of the retinal sac. On the other hand, this line does not by any means indicate the boundary of the healthy retina, for we will see presently that the neighbouring parts frequently sustain secondary alterations. This last point also explains that the phenomena of vision do not always stand in unconditional *rapport* with the detachment of the retina, but, on the contrary, the disturbance of vision is frequently further extended than one might suspect from the extent of the disease.

In the parts neighbouring on the affected places, we find retinitis tolerably frequent, which is here indicated by the development of very minute insular-formed spots, consisting of exceedingly fine loops of vessels, as well as of fine granulated whitish or reddish-white exudation. At first I took these uncommon minute rosy spots for the result of ecchymotic exudation: post-mortem examination, however, corrected me of my error. Under the microscope they appear like a reddish-white film, resting on the retina; and with a little stronger magnifying glass they appear as aggregations or convolutions of exceedingly fine loops of vessels, united into papillæ or cauliflower-like excrescences, which project slightly over the inner level of the retina. I have never seen similar alterations on the separated parts themselves, on the other hand; they are developed frequently while the case is under observation, and appear close to the border of the sac on the adherent portion of the retina. I consider them as the expression of a reactive inflammation, which, when a high degree of it is present, always couples itself with iritis.

The further progress of this disease is generally such that the whole retina is separated from the chorioidea, and is stretched, in the form of a funnel, between the optic entrance and the ora serrata. Soft cataract, and often cataracta dehis-

cens, which develop themselves remarkably quickly, and progressive absorption of the vitreous humour, which is sometimes, but not always, filled with membranous opacities, form at a later period almost constant sequelæ to the more intense degree of the affection. On account of soft cataract originating in this manner, we must always be careful to seek for the existence of a detachment of the retina in such cases, particularly in youthful individuals, the more so as frequently, when it is present, the patient is still sensible to light. If the sensibility be more developed inferiorly than superiorly, and if it be altogether insufficient, we can then, almost with certainty, infer a detachment of the retina. The examination of the patient must be conducted in a dark room, with the aid of a lamp. Patients who are affected with cataract, besides the affection of the retina, perceive the light of the lamp always at the furthest relative distance best when it is held very low. That the same patients—when the central portion of the retina has lost altogether its capacity of conducting, the superior and internal part, however, being still sensible to light—can perceive the light of a lamp held straight before their eyes, although, when the refraction is normal, none of the rays of light pass through the pupil to the above-mentioned portions of the retina, is explained by the dispersion of the rays, caused partly by the cataract, and partly by the slightly transparent tunic which encircles the bulb.

In most cases we can also infer that the characteristic disturbance of vision caused by the detachment of the retina, was present long before the formation of the cataract; the latter takes place usually several months, sometimes years, after the commencement of the original disease.

Chronic iritis, which breaks out frequently in company with the still increasing inflammation of the retina, as above mentioned, influences the appearance of cataracta accreta; but without the occurrence of iritis this kind of cataract has the peculiarity of shrivelling and drying up, and, in an advanced stage, of exhibiting, almost constantly, precipitates on the internal surface of the anterior capsule. These facts explain why amaurosis is so frequently present in such forms of so-called capsulo-lenticular cataract on one side, or in cataracta accreta on the other. In the second eye, where there is no cataract, one finds sometimes separation of the retina; much more frequently, however, opacities of the vitreous humour; sometimes both together. Those eyes affected with cataracta accreta generally become soft and atrophied, to a considerable extent, in consequence of the detachment of the retina.

With regard to the nature of the fluid contained in the sac, I can say nothing decided, on account of the lack of post-mortem examinations on the subject. The rapid occurrence of the disease; the red appearance seen by the patient, changing at a later period into a yellow colour; the coincidence with hemorrhage into the vitreous humour,—all speak in favour of its occurrence by hemorrhage. Indeed, we cannot doubt its occurring in this manner in those cases where a blood-red colour of the sac is established by the ophthalmoscope; on the other hand, it might be somewhat doubtful at the present to bring forward this as the sole cause of the disease. It has certainly nothing to do with an inflammatory exudation, for all inflammatory phenomena are wanting originally, both in the external and internal parts of the eye, and present themselves at a later period, long after the commencement of the disease, in the form of the already mentioned reactive inflammation. Serous effusions, however, could, like hemorrhages, be almost instantly formed, on account of the very great vascularity of the chorioidea.

The causes of this disease speak decidedly in favour of its occurring by hemorrhage from the chorioidea. Patients in general attribute it to the same causes as those which produce effusion of blood into the vitreous humour; sclerotico-chorioiditis is, however, in many cases, though not in the greater number, present.

Of the predisposing causes we do not know much: in only two cases the patients were affected with hemorrhoids, which, however, out of sixty cases does not justify one in drawing a conclusion. On the other hand, in five cases a decided hemorrhagic diathesis was present, particularly copious hemorrhages from the nose. I witnessed the last of these cases in Professor Schönlein's clinique. The patient was exhausted by repeated hemorrhages from the nose, which resisted all treatment, and hemorrhages from the kidneys, as well as ecchymotic spots on the skin, were also present; the sudden occurrence of amaurosis was explained by the separation of the retina from the chorioidea on both sides. Although in this case there was every reason to suppose that the disease was caused by a hemorrhage, yet the ophthalmoscope did not show a blood-red colour, but, on the contrary, quite a natural one. This, however, proves nothing against the sanguineous contents of the sac, as it is to be inferred, *a priori*, that such contents, according to circumstances, can induce a very varied tinge. It would have been of much importance in this case to have made a post-mortem examination; it was not, however, permitted by

the relatives. I once saw detachment of the retina present at the same time with a number of constitutional disturbances, which followed on the suppression of a plica polonica, with which the patient had been affected for many years. This disease does not occur very frequently: in 1000 cases of amplyopia it was met with sixty times. It was remarkable that it occurred very seldom (in seven cases) on both sides. On the other hand, sclerotico-chorioditis posterior, with opacities of the vitreous humour, was often observed. In the glaucomatic process, as well as in extensive alteration of texture, occurring solely in the retina, it appears very seldom as a complication.

Art. XVI.—*On the Anatomy of an Ovarian Tumour.* By Humphrey Minchin, M. B., Physician to the Hospital of the North Dublin Union.

The subject of ovarian tumours has, during late years, occupied a good deal of attention, and the researches of clinical and pathological observers have tended in no small degree to the establishment of enlarged and improved views regarding the nature, origin, and issue of these affections. The development of general principles in every department of medicine is gradually attained by the accumulation and comparison of isolated facts; and we justly recognise the importance of carefully observing and noting every new case, with a view of comparing its several features with those of the mass of similar cases already tabulated and classified. It is from a consideration of this kind, rather than from the affectation of being able to throw any new light upon the pathology or treatment of ovarian tumors in general, that I have been induced to lay before the profession the following rather imperfect history of a case which came under my observation a few months ago.

Mary D., aged 71, was admitted into the hospital wards of the North Dublin Union on the 2nd May, 1858, with the following symptoms: Diarrhœa; occasional vomiting; thirst; extreme prostration; drowsiness approaching to coma; cold extremities.

On the third day she had rallied pretty well from the state of stupor and exhaustion under which she laboured on admission; her mind, however, was at this time so much confused that she was unable to give a definite or connected account of her previous history, and all that could be ascertained from her was, that she was suffering from a pain in the left iliac region, to which she had been subject "off and on" at irregular

intervals for a great many years. The body, generally, was much emaciated; the abdomen enormously enlarged by what she called an "old dropsy," but which was easily recognised on examination to be a very large tumour. There was no dysuria, and the urine, which was voided three or four times daily, was high coloured and ex-albuminous. No swelling of the feet or of the face; chest apparently sound.

In about fourteen days after admission she sank from exhaustion, apparently induced by the diarrhœa.

A few days afterwards I obtained from a female relative of the deceased the following history of the case. It appears that, about thirty years previously, during her confinement of her fourth child, she was suddenly seized with a deep-seated pain in the left iliac or inguinal region. Her labour, however, was happily terminated, and she made a good recovery, being able to go about in the usual time. But the pain soon returned, and came on at such frequent intervals that she soon became reconciled to its continuance (for it was almost constant at this period); but while she felt convinced it would sooner or later be the occasion of her death, she derived some consolation from the reflection that she had the satisfaction of knowing where the blame was to be attached,—in fact, the impression that the midwife had inflicted some grievous injury, while attending her, could never be removed from the minds of the patient and her friends. In this not very charitable philosophy the narrator appeared fully to coincide. About three months after her confinement she perceived a tumour in the middle of the hypogastrium, small and movable, free from pain, except when pressed upon, when the pain extended towards the left groin, in the direction of the original soreness. The tumour increased slowly and steadily, and in about three years the abdomen was as large as at the full term of gestation. Her general health was not impaired during that time; however, as she felt the size of the abdomen to be a great inconvenience in her ordinary avocation, she was induced to seek the advice of an old woman, who, at once "diagnosing" a dropsy, recommended her to drink one or two glasses of gin occasionally, and she considered that this remedy was of great use to her, as the belly, she thought, did not for a long time afterwards undergo any increase in size; she, therefore, continued to follow the old woman's directions strictly. About ten or twelve years later, the abdomen having at length become much larger, she applied for admission into one of the hospitals in this city, where she was advised to allow herself to be tapped; but to this she would not submit. About five years before her death her strength began to fail; she had

much difficulty in moving about, and was obliged to maintain the sitting posture during the greater part of the day, with her feet raised on a high stool, that the thighs might better support the weight of the abdomen; she now suffered every evening from numbness of the legs, with some œdema of the feet and ankles, but these symptoms usually subsided after a few hours of rest in the horizontal position. Her appetite remained good, and her digestion continued to be very regular up to a late period of her life, when she suffered from occasional constipation, with scanty secretion of urine, for which she had recourse to castor-oil and gin-punch. During the thirty years that she carried the large tumour, even to the advanced age at which she was seized with the symptoms first described, she never felt really ill, her only sufferings having been those I have mentioned. I could not ascertain that she ever had an attack of peritonitis, and I was informed that she never had hemorrhage.

She had been a person of large frame, very robust constitution, and cheerful disposition.

The body was examined in eighteen hours after death.

On opening the abdomen by the usual mesial incision, it was found that the tumour was firmly adherent to the abdominal wall anteriorly, this adhesion extending from a short distance below the umbilicus upwards very nearly as far as the epigastrium, and laterally for about six inches on each side of the incision. The peritoneal lining of this part of the abdomen was exceedingly firm and strong, being nearly a line in thickness, while the muscular parts of the wall were pale and much attenuated. On breaking through the condensed areolar tissue which formed the bond of connexion between the tumour and the wall, and throwing back the flaps so as to expose the whole front of the tumour, this latter presented an appearance not very unlike an enormous gravid uterus, concealing from view all the abdominal viscera. The tumour appeared to have an elongated, oval shape, and extended obliquely upwards towards the right hypochondrium, bulging forwards considerably as it ascended, so as to form a remarkable prominence at its upper extremity, at which part, and for about one-third downwards, a distinct fluctuation of its contents could be felt; while the middle and lower portions were firm, solid, and elastic to the touch. The anterior surface was uniformly smooth and white, its peritoneal covering having undergone a process of induration and thickening similar to that observed in the layer lining the corresponding part of the abdominal wall.

The lateral and posterior parts of the mass were quite free

from adhesion to any of the viscera save the uterus, which organ was firmly incorporated with the back of the tumour at its lower part. The removal of the mass from the body, for examination, was effected by turning it forwards on the thighs, and merely cutting through the elongated and attenuated vagina, along with some vessels and areolar tissue. The bladder, small and contracted, was left in situ. This viscus, as well as the rectum, appeared to have sustained no displacement.

The tumour on its lateral and posterior aspects exhibited a very irregular outline, being compressed by large, firm, fibrous bands, which crossed in various directions, and through whose interstices projected large sacciform masses. Of these fibrous sacs, there were seven or eight, and their size averaged that of a large fœtal head. When cut into, they presented a coarse fibro-areolar structure, of very firm consistence and yellowish white colour, with numerous large sinuses or cavities from which flowed a dark reddish serous fluid. On cutting more deeply into one or two of these projecting masses, towards the centre of the main tumour, the tissue appeared softer and less fibrous, breaking down readily into an opaque yellow, semifluid matter.

An incision into that part of the mass which had been situated towards the right hypochondrium gave exit to nearly a gallon of fluid of the same colour, mixed with abundant flocculi, having the appearance as of coagulated albumen. The evacuation of all this fluid, however, caused but a slight diminution in the bulk of the tumour. The interior of the sac was paved with numerous granular nodules or tubercular projections, smooth and firm to the feel, and varying in size from that of a pea to that of a small walnut; these nodules, when cut into, appeared to be filled with a gelatinous substance, of semifluid consistence.

The anatomical relations of the tumour to the pelvic viscera were interesting, and presented some difficulty when we tried to reconcile the appearances found on dissection with the history of the early symptoms. On the *back* of the pelvic part of the tumour was situated the uterus; this organ being spread out, thinned, and identified so closely with the substance of the diseased mass, as to be with difficulty recognised at first; a careful dissection, however, showed that what appeared now as the posterior free surface of the uterus was truly the *front* of this organ; in fact, the tumour, having contracted an intimate adhesion to the back of the uterus, had become rotated on its vertical axis, carrying that organ completely round from the front to the back. This appeared evident from the fact that on the posterior and *right* side of the tumour was found

the left ovary, this organ occupying such a position with respect to the folds of the broad ligament and to the Fallopian tube, as could not be reconciled with the supposition that it was the proper ovary of that side. The Fallopian tube was easily traced from the cornu of the uterus to the terminal fimbriæ. This tube was much elongated, but the ovary was natural in size and structure. The *right* tube likewise could be traced from its corresponding uterine horn, but, instead of floating loosely, as did the tube of the opposite side, it passed in a circular direction round the *left* side of the tumour, in whose substance it was slightly imbedded, till it reached the anterior surface, its fimbriated termination being situated a few inches to the left of the anterior mesial incision. The uterine cavity was enlarged; its lining membrane smooth and quite continuous with that of the vagina, not a trace of an os, or lip being discernible. To the posterior wall, close to the fundus, was attached a vascular polypus of about the size of a filbert. The thickness of the uterine wall at its inferior part was a quarter of an inch; near the fundus it was somewhat less. The vagina was very much elongated, and its caliber so much narrowed as hardly to admit the little finger. The tumour itself appeared to be an enlarged *right ovary*.

The vertical axis of the tumour measured 21 inches in length, the transverse 16. Its greatest circumference was 54 inches, and its smallest, 43. The mass weighed nearly 70 lbs.

In making the anatomical examination I had the advantage of being assisted by my friend Dr. Sinclair; Dr. Kirkpatrick was also present.

The history of this case presents several features of interest, among which may be mentioned the total absence of dangerous symptoms, and the comparative immunity from suffering for a very long period, one of the longest on record, during which almost the only inconvenience occasioned by the presence of this very large mass was its bulk and unwieldiness. Whether the origin of the disease was in any way connected with or dependent upon an injury received during parturition, it is not easy to determine, the right ovary having been the seat of disease, while the pain which was complained of, and which began suddenly at the period referred to, was confined altogether to the left iliac and inguinal regions.

Art. XVII.—*Clinical Illustrations of Chorea in reference to its connexion with Rheumatism.* By T. P. Heslop, M. D., Physician to the Queen's Hospital, and Professor of Practice of Physic, Queen's College, Birmingham.

Of late years much evidence has been adduced in favour of the existence of an intimate relation between that curious disorder of the motorial functions chorea, and rheumatism. Dr. Copland, many years ago, pointed out the fact, and may claim the merit of having opened up the whole subject. But, although numerous succeeding authors in this country have drawn attention to cases illustrative of their connexion, among whom Dr. Begbie, of Edinburgh, must be prominently named, yet much doubt is expressed by writers of great authority, and further evidence is demanded before a general agreement upon the question can be arrived at.

The cases I am about to relate have been drawn up in the most succinct manner, and so as almost exclusively to relate to the disputed point. They have not been taken in reference to prospective publication, or they would have been more definite in this particular aspect than, unhappily, they will be found to be. The list includes the whole number of in-patients, labouring under chorea, admitted since the month of June, 1852, into my clinique, with the exception of one case, of which, by some accident, I can find no record. I have not abstracted the cases of out-patients, as the difficulty of effecting a minute investigation and exact record is almost insurmountable in this branch of hospital practice. I have also refrained from including cases which have occurred to me in private practice, as I should be compelled here to trust to my memory rather than to written data; although the most striking illustration of the connexion between the two diseases, which has hitherto come under my notice, was such a patient, whose case I shall subsequently allude to. It may be proper to observe, that this list gives but a most inadequate view of my actual experience of this disorder during the past ten years. During nearly three years and a quarter of that time I was the resident physician of another hospital in this town, much larger than the one with which I am now connected, and where I enjoyed the opportunity of observing the cases of chorea of all the physicians, —a disease which formed a remarkably important item in the whole number of admissions. I am, of course, unable to refer to that experience but in the most general manner; but my impressions are very distinct as to the frequency of the connexion between rheumatism and chorea in those cases. I have

a distinct recollection of two fatal cases only: both were girls; one about four, the other about twelve years of age. The first died from intense pericarditis; the second, with general pyrexia and endocarditis, chiefly affecting the aortic valves. A boy, aged about ten, was admitted with general chorea. At the end of six weeks he was quite well, but was readmitted four days afterwards with acute rheumatism, endocarditis, and a relapse of the choreatic symptoms. A third time he was admitted, suffering from a return of his chief symptoms. Seven or eight years afterwards, this boy, now a young man, applied as an out-patient at the Queen's Hospital, and I found him to be the subject of cardiac hypertrophy, with valvular disease. A young girl, at the present time under my care, with a remarkable cardiac rhythm and hypertrophy, was an in-patient of the former hospital eight or nine years ago, for acute rheumatism, endo-pericarditis, and chorea. She has been constantly ill since, with symptoms referred to the heart, and to arteritis of the right arm, connected, probably, originally with embolism. The radial pulse of this arm was, for a lengthened period, imperceptible. But the case previously hinted at, which occurred to me a few months ago, is still more suggestive. A young lady, thirteen years of age, enjoyed excellent health up to the month of June last, when she was attacked with rheumatism of the joints of the extremities in a mild degree. After a few days, choreatic symptoms appeared; the movements were frightfully violent; a well-pronounced to-and-fro sound became developed over the præcordial region, where she had great pain; and with these symptoms she died. She was the third child of her parents. Her father is, to a very unusual degree, a martyr to gout. Three years ago I attended the eldest and second sons, respectively about fifteen and thirteen. They had been to school near town, and were there attacked with rheumatic fever. They were both directly afterwards seized with chorea in a moderately severe form, and I saw them for this disorder, in conjunction with my lamented friend, Mr. Amphlett. These facts are strangely at variance with some recent statements upon the doubtful relation of cardiac inflammation with chorea, but fully bear out the earlier observations of Copland, Bright, Watson, Begbie, Hughes, Kirkes, &c.

It is hardly necessary to define the grounds on which I have admitted a case to be chorea. The diagnosis is, perhaps, as simple in its basis, and as easily attained as any in special pathology. I may merely say that, in bedside diagnosis, I admit, with Romberg, that "the chief features of this affection consist in combined movements of one or more groups of mus-

cles, independent of cerebral influence; increasing in violence when predetermined movements are attempted, and more or less interfering with the latter." This able author disposes of the main subject of this paper in the following statement:—"Bright has found that rheumatic affections, both articular rheumatism and rheumatic pericarditis, are frequent complications and causes of this complaint. My own experience, and that of other writers, does not coincide with this opinion. I have never omitted examining the heart in chorea patients, even when there were no functional disturbances to draw attention to the organ. But, with the exception of two cases, in which the complication was accidental, and in one of which it was only observed after the fifth relapse, brought on by a rheumatic attack, I have not found chorea accompanied by disease of the heart."

Grisolle, in his admirable work on Medicine, gives the English physicians credit for discovering a coincidence. He says:—"Some physicians, particularly in England, have thought to find a relation of cause and effect between rheumatism, particularly rheumatism with endo-pericarditis, and chorea; but, at present, it is impossible to see here anything but a coincidence"[a].

Dr. Wood of Philadelphia observes, "that an intimate association between chorea and pericarditis and endocarditis, has been noticed by some writers; and the complaint has been ascribed to a rheumatic constitution of the blood. It is very possible that rheumatic irritation affecting the cerebral centres may occasionally be an exciting cause; and acute rheumatism has undoubtedly been sometimes associated with chorea. The frequent existence, moreover, of cardiac murmurs has tended to give plausibility to the theory. But though chorea frequently comes under my notice in hospital practice, I have never happened to meet with it connected with rheumatism, or with positive evidence of cardiac inflammation. The murmurs I believe to be generally dependent either on the anemic state of the blood, which is a frequent attendant, or on irregular contraction of the columnæ carneæ under disordered nervous influence"[b].

Dr. Aitken, whose work is the most recent systematic treatise on Medicine, alludes to this subject as follows:—"The evidence of these (enumerated) writers is amply sufficient to prove, that a considerable number of individuals affected with

[a] Fourth Edition, 1850. I have an impression that this statement is modified in later editions.

[b] Practice of Medicine, vol. ii.; Fourth Edition.

chorea have suffered from cardiac or synovial rheumatism previously. But it is unquestionable that all have not so suffered; and indeed the history of the majority of the cases shows that chorea has a more intimate connexion with mental disease, such as imbecility, or even insanity, than with, perhaps, any other morbid state"[a]. This latter statement strikes me as singularly opposed to general experience. I have never seen any mental disorder either in causal or sequential relation to chorea. On the contrary, the temporary nature of the peculiar vacant expression and general oddity, so notable in the disorder, has so strongly impressed my mind, that I invariably give to anxious friends a highly favourable prognosis upon this point.

Dr. Todd[b], on the other hand, fully admits the relation of rheumatism to chorea, and gives one case of the latter disease, which immediately supervened upon an attack of the former. Having alluded to the characters of the urine in the two disorders, he goes on to state:—"This and other circumstances have led me to associate the state of constitution, in which chorea is apt to occur, with the rheumatic diathesis. The proneness of patients of rheumatic constitution to attacks of chorea, the tendency to a repetition of the attacks in both diseases, the frequency in chorea of endocardial affections, so common in rheumatic states, all point to this affinity between the two disorders."

Dr. Watson[c] bases his views of this question mainly upon the important analysis of 309 cases by Dr. Hughes, contained in Guy's Hospital Reports; and upon an analysis of 36 cases by Dr. Kirkes. He observes that, "of sixteen cases examined after death during the existence of chorea, the organs within the thorax were not mentioned in two; were reported healthy in two; and were more or less diseased in twelve;" and again quotes from Dr. Hughes, that, "out of 104 cases in which special inquiries were made respecting rheumatism and heart affections, there were only fifteen in which the patients were both free from cardiac murmur and had not suffered from a previous attack of rheumatism." From such evidence Dr. Watson may well conclude:—"There is convincing evidence in these statements, of a frequent, though not a necessary, connexion between that disease (chorea) and acute rheumatism." Such strangely opposite[d] statements warrant the

[a] Handbook of the Science and Practice of Medicine. 1858.

[b] Clinical Lectures on Affections of the Nervous System. Second Edition, 1856.

[c] Lectures on the Principles and Practice of Physic, Fourth Edition, 1857.

[d] I have been unable to consult the work of M. Seé, who has given evidence on the affirmative side of the question.

belief that further clinical inquiry may prove useful, and that this abstract of cases may escape the charge of being superfluous.

Case I.—A. S., a girl, aged 10, admitted June 29, 1852. Had a severe attack twelve months ago, attributed by her mother to the emotion caused by the loss of all her brothers and sisters in the course of a fortnight. The present attack commenced about six weeks previous to admission; no cardiac bruit. "Her father and mother have no tendency to rheumatic attacks." She is very hysterical. A severe case.

Case II.—C. P., aged 15, admitted September 21, 1852; a locksmith. Had an attack last Christmas, and has never been quite free from it since. Nothing stated in the case-book relative to rheumatism or cardiac disease; urine dark, reaction acid, sp. gr. 1025. A slight case.

Case III.—S. W., girl, aged 13, admitted November 23, 1852. Attack commenced about a month ago; never had rheumatism, fright, or worms. Has not menstruated; heart sounds free from bruit, but during residence in the hospital complained of pains in the chest. Nothing stated about relations having a tendency to rheumatism. A very severe case.

Case IV.—M. J., a married woman, aged 20, admitted November 23, 1852. Was confined ten weeks ago. A few weeks back she was attacked with rheumatism, which seems to have been very general. Shortly after the rheumatic attack, she was seized with slight twitchings and tinglings, first in the left upper extremity, then in the lower one of the same side; the right side is now affected, but not so badly as the left. States that when pregnant, and near her time, she had a fright which caused her some uneasiness; there is a loud systolic bruit two inches below the nipple, not heard up the course of the aorta. During residence in hospital, she had rheumatic pains and swellings of many joints; urine, sp. gr. 1015, with slight light deposit. A case of moderate severity.

Case V.—S. F., aged 8, a girl, admitted September 2, 1853. Has been suffering from general involuntary convulsive movements for three or four weeks; a few months ago she passed some flat worms. A loud bruit is heard with the heart's systole, at the apex and along the left side of the sternum; urine turbid, dense yellowish-gray deposit, reaction highly acid, sp. gr. 1028. lozenge crystals of uric acid in the deposit. A moderately severe case.

Case VI.—R. H., aged 22, a married woman, admitted November 1, 1853. Her mother is very subject to rheumatism, and is also said to have disease of the heart. Patient has

never had rheumatism. She is three months advanced in pregnancy. Heart's action vehement, but sounds normal. Urine pale; sp. gr. 1015. The disorder had existed for six weeks prior to admission. Within a few days after entering the hospital, she was dismissed, owing to disobedience. A mild case.

Case VII.—M. W., aged 12, a girl, admitted November 9, 1853. Was in good health until six weeks ago, when she was attacked with acute rheumatism, on the subsidence of which, after three weeks, she was seized with twitchings in the hands and arms, and afterwards in other parts of the body. Articulation much impaired. There is a slight prolongation of the first sound of the heart. Urine exhibits a copious deposit; sp. gr. 1035. An unusually severe case.

Case VIII.—H. T., aged 25, married, admitted August 24, 1854, labouring under a moderately severe attack of chorea. She was pregnant. On examination, a loud cardiac bruit was heard, but, unhappily, no notes were taken of this case, as she died on the 27th of August, while I was absent. I was informed by my clerk (Mr. Jauncey) that there was extensive disease of the mitral orifice, conjoined with hypertrophy.

Case IX.—A. S., aged 13, admitted October 16, 1854. This is the subject of Case I. It appears that this is the third attack, and although the first attack was attributed to a fright, no similar cause appears to have been in operation this time. It is eight weeks since the seizure commenced, "without any assignable reason." Complains of pains in the back, shooting through the chest; worse on taking a deep inspiration. A systolic bruit is heard at the base of the heart, and up the sternum; pulse soft, weak, and somewhat irregular. Urine clear, rather pale; sp. gr. 1020. The application of nitric acid causes an extremely deep colour.

On the 28th of November, it is reported:—"The movements have quite disappeared; systolic bruit still present."

On 7th of December, "slight movements again; complains of pain across the præcordial region."

Case X.—L. E., a girl, aged 14, admitted October 31, 1854. Has suffered from privation, but has not been exposed to wet or cold. Two years ago she had a fright, followed by convulsive twitchings; was then admitted into the General Hospital; was much troubled, at that time, with flat worms. Twelve months afterwards, again became a patient of the same hospital, for the same complaint. Has never had rheumatism. This present attack commenced three weeks ago. Complains of pains in the joints and occasional frontal cephalalgia; catamenia have not

yet appeared. A loud systolic bruit is heard about an inch below the nipple. Second sound normal.

November 7. No pains anywhere; movements less. No worms detected in the motions.

10th. Movements diminished; complains of pain beneath the mammæ and right side. Had great pain in the loins after a cold bath.

19th. Movements improved, but the pain in loins is still complained of.

20th. Complains of pains in the wrist and shoulder-joints. No swelling.

December 1. Discharged.

Case XI.—J. H., a boy aged 14, admitted May 19, 1854, labouring under twitchings of arms and legs, and impairment of articulation. Five years ago he had an attack of "St. Vitus' dance in the right side, which was cured by a surgeon in about two months." Continued afterwards in good health, with the exception of an occasional headach, until a month ago, when twitchings returned on same side. "A systolic bruit is audible in the cardiac region." Urine, sp. gr. 1020, normal. Has never had rheumatism.

July 11. Jerking movements have entirely disappeared. Bruit unaltered. Discharged.

Case XII.—G. T., aged 40, married, a male, admitted August 29, 1854, with tolerably severe choreatic movements; about four years ago he was attacked with chorea, when it was seven weeks before perfect recovery took place. Has had three or four attacks of the same malady since. The present attack commenced three weeks before admission. Has never had rheumatism. Notes of case imperfect.

Case XIII. W. M., a male, aged 17, admitted December 18, 1854. Has had chorea for the last twelve years; it first came on *severely*, after a bad attack of rheumatic fever, and he was told that the attacks were brought on by being put down into a damp cellar by his schoolmaster. It is also stated that the chorea was preceded by the rheumatism by about a year. During the whole of this period he has been yearly the subject of a recurrence of the movements, coming on suddenly about the autumn, and ceasing similarly at varying periods during the spring. He has been only treated for it once, four years ago at Guy's Hospital, under Dr. Babington. None of his family have had the disease. He cannot attribute the recurrence of the disease this time to anything excepting hard work and anxiety in consequence of a relation's illness. Has always

enjoyed good health, with the exception of several severe attacks of rheumatism. Has never detected worms in his stools, and has always lived well. Pulmonary organs normal, with the exception of a few occasional râles. Heart's impulse moderate. A systolic bruit is heard at the apex, less distinctly up the aorta, and is again very audible in both subclavians and carotids. On the right side of the neck there is a continuous murmur. Pulse full, bounding. Urine clear, pale, acid; sp. gr. 1018.

December 21. Complains of pain in the left knee and elbow, and at the base of the left side of thorax, where there is slight dulness.

January 27. Movements rather worse.

28th. Lumbrici in considerable number are observed in his evacuations after a terebinthinate draught.

February 25. Discharged much relieved. Bruit has almost disappeared.

Case XIV.—C. H., a boy, aged 10, admitted July 6, 1858. A coarse friction sound was audible, generally double, at the base of the heart, whose impulse is tumultuous and throbbing. Pulse 108, feeble and compressible. Tongue coated, and very tremulous. Bowels habitually costive. Urine abundant. There is constant motion of the fingers of the left hand, together with frequent twitching of the left arm. Face is puffy, and rather livid. General physiognomy that of a chorea patient, with vacancy of expression. There is no paralysis either of motion or of sensation. He has never suffered from rheumatic pains, but his father has been severely attacked with rheumatism. About three weeks ago, whilst at play, he suddenly found himself unable to control his legs. They jumped about, to use his own expression, so much that he was unable to walk. At the same time he experienced similar involuntary movements of the left arm, and states that the mouth has been often drawn to the left side. About a week after the first invasion of these symptoms, he experienced a stitch-like sensation in the præcordial region, and became low-spirited and generally ill.

July 10. Feels much better. Friction sound audible at a lower level. Twitching movements of left arm less marked; still, however, considerable.

20th. Frottement almost gone; action of heart more tranquil; experiences no sense of uneasiness anywhere, but "is unable to keep the fingers of his left hand still."

Case XV.—A. E., a girl, aged 18, admitted March 21, 1855, was seized two months ago with chorea in the right arm, which subsequently extended to the whole of the right side. Has

never had anything of the kind before, but has had good health. Never had rheumatism, and there is no hereditary predisposition to it. Has not suffered from worms. The catamenia have not appeared for the last two months, and when last present were scanty in quantity. She is a stout girl and evidently of the "nervous temperament." Heart normal, with the exception of slight irregularity. Urine not noted.

April 12. Has progressed favourably. Movements only obvious during excitement.

Case XVI.—H. P., aged 15, a girl, admitted November 17, 1855. Temperament nervo-lymphatic. First became excited on the 5th, and had involuntary spasmodic action of the muscles, which gradually increased in violence. Had nearly lost power of speech on admission. No cause assigned. Nothing stated about rheumatism; but a *mitral bruit* may be heard at the apex of the heart. Delirium, with contracted pupils, supervened; subsequently the pupils became dilated, the throat inflamed, and a deep abscess appeared in the neck. A very severe case. The register of necropsy too imperfect to be quoted.

Case XVII.—G. R., aged 15, a girl. Temperament, nervo-sanguine. Admitted January 29, 1856. Had an attack of chorea ten months ago; otherwise health has been good. Present attack came on about a month ago. Tongue coated. Movements on admission very severe, affecting the whole body, but worse on the left side. Has at times palpitation of heart, and night headach. Pulse frequent, varying between 96, 100, and 110. Nothing stated relative to rheumatism or character of urine.

Case XVIII.—S. F., aged 11, a girl, admitted May 12, 1857. The subject of Case V. It is three years and a half since the last attack. On admission, constant snatchings are noted in face, arms, and legs. Has pain in the head, but none in the extremities. Nothing stated about rheumatism either in herself or family. It is stated several times in the course of the report that there is no *bruit*.

Case XIX.—H. A., aged 15, admitted July 6, 1858, labouring under intense chorea. She is a remarkably robust and finely developed girl. When about five years old she suffered from general dropsy and suppression of urine. After a long illness she became pretty well, and so continued until six weeks since, when she had an attack of acute rheumatism. Her right arm and lower extremities were affected, the joints being painful; but, it is said, without redness or swelling. At the same time she suffered from very severe pain in the head, and exces-

sive tenderness over the whole scalp. She was confined to bed. Does not appear to have lost the headach when the first symptoms of chorea in the right arm and leg appeared.

The jactitations and twitchings rapidly improved up to the 16th, when a remarkable attack came on. During the day the nurse had observed that she passed urine more frequently than usual, and of a pale colour towards the evening. At 10 o'clock P. M. she suddenly awoke from sleep, and was found by the house surgeon suffering from great dyspnœa, arising apparently from spasm of the laryngeal muscles, and congestion of the vessels of the head and neck, and blueness of the lips. She, in fact, seemed to be in a state of almost complete asphyxia. The contractions of the muscles of the extremities, especially of the arms, were extremely violent; although during the day she had been unusually quiet. These distressing symptoms lasted about four minutes, when they gradually abated, but soon afterwards were renewed by the attempt to swallow liquid. After a quarter of an hour she was again similarly seized, and then fell asleep, but frequently passed urine during the night. Next morning she complained of hysterical symptoms,—choking and rising sensations in throat, &c.; and at 10½ A. M. I was summoned hastily to her bedside. I found her labouring under the same symptoms as had come on the night previously. The teeth were firmly set; the arms thrown wildly about the bed; the vessels of the head and neck turgid, and she struggled most violently. While chloroform was being brought, she became relieved. The urine up to 6 o'clock last night was high-coloured, acid, sp. gr. 1030, containing a little mucus, and about 12 ounces in amount. Within the next twelve hours from 20 to 25 ounces were passed, pale, slightly acid; sp. gr. 1010, quite free from deposit. These symptoms did not recur The catamenia in this patient have always been regular.

Case XX.—S. A. A., a girl, aged 3, admitted September 10, 1858. About a fortnight ago her mother observed a peculiar twitching movement of the mouth and eyes, and a day or two afterwards snatching movements were noticed in the arms, and she constantly moved her fingers, and opened and shut her hands. Nine weeks ago she was very ill with rheumatic fever; the right knee was greatly swollen, and she has never been well since. On admission, her mouth is observed to be constantly moving, but the arms are chiefly affected, they being continually thrown about in a very characteristic manner. During sleep she lies perfectly tranquil, and only a slight movement is now and then to be observed.

I shall now give a rapid summary of the cases in reference to the rheumatic condition. The first case appears to be dependent exclusively upon an excited emotional state—grief for the loss of friends; had a previous attack. The second gives us no information as to the cause; had been attacked nine months before, and never been quite free from it since; urine of high specific gravity. The third case is stated to have never had rheumatism; and there is a total absence of the ordinary causes of the malady; she is said to have had chest-pains during the attack. The fourth case supervened "shortly after" a general attack of rheumatism; a loud cardiac bruit at the apex was noted; while under observation, had rheumatic symptoms. The fifth case presented a loud bruit at the apex, and along the left side of the sternum; the urine highly acid, of high specific gravity, was turbid, and deposited uric acid crystals. The sixth case complicated pregnancy; her mother is very subject to rheumatism; the heart's action vehement, but without bruit; urine, specific gravity, 1015. The seventh case appeared on the subsidence of an attack of rheumatism; a slight cardiac bruit was noticed; copious deposit of urine, specific gravity, 1035. The eighth case complicated pregnancy; serious mitral disease and hypertrophy were found after death. The ninth case is the same as No. 1; it is the third attack; pains in the back and chest; a systolic bruit at the base of the heart and up the sternum, which persisted when movements had disappeared; pain in the præcordial region; specific gravity of urine 1020. The tenth case exhibits the third attack of the disorder; complained of pain in joints, especially wrists and shoulders, and beneath the mammæ; a loud systolic bruit audible an inch below the nipple. The eleventh case is the second attack of the disorder; never had rheumatism, but a systolic bruit existed in the cardiac region, which was unaltered when discharged; urine, specific gravity, 1020. The twelfth case is, probably, a fifth or sixth attack; never had rheumatism; notes of case imperfect. The thirteenth case is as much the history of rheumatic attacks as of chorea; and while in hospital suffered from rheumatic pains in the joints; the cardiac bruit was, probably, both organic and inorganic; when discharged, it had almost disappeared. The fourteenth case was admitted, labouring under pericarditis, with chorea; had never suffered from rheumatic pains; but his father severely so. The fifteenth case appears to have no relation to rheumatism; the heart is said to exhibit "slight irregularity." The sixteenth offers no statement relative to rheumatism, but a mitral bruit was heard at the apex; cerebral

symptoms of unusual severity supervened; record of dissection unreliable. The seventeenth case is a second attack; suffered from palpitation of the heart; but the record supplies no information relative to rheumatism. The eighteenth is the same subject as the fifth; three years and a half have supervened between the attacks; nothing is stated about rheumatism; and it is note-worthy that the bruit formerly observed had entirely disappeared, as repeatedly mentioned in the Report. The nineteenth case closely supervened upon an attack of acute rheumatism. Remarkable hysterical symptoms appeared during the progress of this case, coincident with a very striking change in the character of the urine. The indications of laryngismus and trachelismus were most formidable, and had relief not been quickly obtained, it would have become necessary to seek it in the operation of bronchotomy. The twentieth case offers, in a very young child, an interesting illustration of the relation of chorea to rheumatism; a marked attack of the latter had preceded the outbreak of the former. In a child three years old, it is difficult to imagine hysterical mobility to have much to do with the causation of the disorder.

Such is the evidence upon the point in question supplied by my experience; and I do not imagine that an unbiassed mind can draw any other conclusion from it than that rheumatism has a very frequent clinical connexion with chorea, and that it may give both a predisposition and afford an exciting cause to the convulsive malady. Doubtless, a certain hysterical mobility, a peculiar so-called "nervous" habit, is, in the great majority of cases, the predisposing cause; and the actual seizure is precipitated by fright, possibly worms, prolonged constipation, catamenial suppression, or irregularity. But it appears to me unquestionable that an attack of rheumatism, especially if invading the heart, does frequently assume the rôle of an exciting cause, and not rarely is sufficient to excite the disease, when no other obvious predisposition exists. This latter would seem to be the case when invading very young children. Chorea is peculiarly a disorder of the lower classes, and for the most part attacks ill-nourished children. This may account for the very favourable view given of this affection, as to its therapeutics, by some authors whose observations have been mainly drawn from private sources, the scantiness of which is, for the most part, sufficiently apparent. Assuredly, the more severe forms of rheumatism are to an equally marked degree disorders of the same classes, and connected with hardships of every kind, physical fatigue, insuffi-

cient or bad food, prolonged exposure, the anxieties daily induced by precarious subsistence.

Dr. Watson observes that the temperature appears to influence its development. "Dr. Hughes found it to be more frequent in the six winter months, in the ratio of 3 to 2. This tallies with Romberg's remarks, that the disease becomes rarer as we approach the equator, and is almost unknown in the tropics." This is not supported by these cases. Reckoning from the last part of September, ten of them only were admitted between that time and the end of March; and it must be recollected that several had the disorder for some time previous to admission. One case, however, the thirteenth has an interesting history in this point of view. During a period of twelve years he had been yearly the subject of a recurrence of chorea movements, which came on suddenly about the autumn, and ceased in like manner at varying periods in spring.

I avoid further reflections upon the history of these cases, as they confirm, to a great extent, previous opinions, and as they are foreign to the object of this paper. But I am desirous of submitting a question to my readers, which has not been yet placed in a definite manner before practical physicians. Let it be granted that rheumatism is often connected with chorea in the relation of a cause: that rheumatism not unfrequently comes on during chorea. Should this knowledge modify the present views of the treatment of this latter disease? Should we direct our proceedings against an imagined rheumatic acid, or a hyperinotic condition of the blood, or inflammation more or less circumscribed? Or, on the contrary, should we employ those remedies whose utility has been confirmed by experience, in sole reference to the convulsive condition? I think the latter must be the conclusion of the clinical observer when he consults his own observations; and still more when he reflects that our predecessors were not less successful than ourselves in coping with the disorder, at a time when its particular connexion with rheumatism was as yet unrecognised.

This remark must be accepted with limitations, for some of the remedies employed in chorea have great therapeutic efficacy in various forms of rheumatism: such are arsenic and quina. But this will not apply to the preparations of zinc, and scarcely even to those of iron; and I am unaware of the existence of observations tending to show any advantage from the use of arsenic in the more acute febrile forms of rheumatism.

I will not aver that upon a subject of such grave moment I

am prepared to state the course which should be adopted in all cases of complicated chorea; but I strongly lean to the opinion that the less the complication is allowed to influence the mind of the prescriber, and the more energetic his efforts to control the special features of the disease, the more pronounced will be his success in dealing with it. The fourteenth case, though presenting a well-marked pericarditis, was treated exclusively by Fowler's solution, and the application of derivants to the præcordial region. The twentieth, aged 3, supervening upon a severe attack of rheumatism, was treated also exclusively by arsenic and warm baths; the results in both cases, were highly satisfactory. The latter especially fattened to a marked degree under the remedy. Many authors have laid great stress upon the value of arsenic in chorea, and Dr. Begbie has recently communicated to the Edinburgh Monthly Journal a valuable paper, in which he again draws attention to this agent. For several years my own prepossessions were in favour of the zinc preparations, although I have frequently employed the arsenical solution or the liquor arsenici chloridi of the London Pharmacopœia. On carefully re-examining my cases, I have been forcibly struck by the oft recurrence of notes showing benefit from the use of arsenic, after other measures had failed. I had, in fact, previously but a very inadequate impression of the results of my own cases in this aspect. But it is unnecessary to add further remarks on the question of the value of arsenic, as there is here a very general agreement among the best authors.

Art. XVIII.—*Amaurosis consequent on Chronic Retinitis, cured by Strychnia.* By Daniel Griffin, M.D., M.R.I.A, Licentiate of the King and Queen's College of Physicians in Ireland; Physician to the County of Limerick Infirmary, &c.

In the Dublin Quarterly Journal of Medical Science for August, 1853, I gave an account of a case of complete amaurosis cured by strychnia. A second case, nearly similar, has since come under my observation, and was equally remarkable in manifesting the singularly restorative powers of the same remedy.

Denis Collins, a healthy-looking man, thirty-three years of age, was admitted into the County of Limerick Infirmary on the 24th of September, 1857. He had lost the sight of the left eye, many years since, by a destructive inflammation which injured

the internal parts, and left the whole cornea incurably opaque. Within the last three months he has been affected with dimness of the right eye, which has been gradually increasing, and is now nearly complete; he has not sufficient sight to know people, and can with much difficulty find his way. I can get but a very imperfect account of this affection, but in its progress it seems to have been attended with little or no pain, and he appears to have done nothing for it. The pupil is extremely sluggish in its movements, and rather larger than natural, but the iris is unchanged in colour. There is a moderate amount of congestion of the vessels of the conjunctiva and sclerotic coat; otherwise the appearances are as usual, and pressure on the globe of the eye indicates no softening or other abnormal condition.

He was immediately leeched at the temple, and blistered behind the ears and on the forehead alternately; smartly purged, and put upon the use of mercury until the gums were made slightly tender, and showed some tendency to ptyalism. These measures were repeated and persevered in until all marks of congestion were entirely gone, and the eye was brought to a healthy aspect, a proceeding which occupied about three weeks. There was not, however, the least appearance of returning vision, nor any greater activity in the motions of the iris, nor, indeed, any other sign of restoration of function in the nerve. Remembering, however, the great benefit derived from strychnia in the case to which I have alluded, I was determined to employ it again in all such instances as seemed favourable—and as these measures were but preliminary to its use, I was not disappointed at such a result. He was now, therefore, in the fourth week from his admission, ordered one-twelfth of a grain of strychnia every night at bed-time, with one grain of Dover's powder, made up into a pill with crumb of bread; he used, at the same time, a collyrium of sulphate of zinc, as the eye looked weak and watery. A full fortnight's trial, however, of this plan gave so little promise of success that I was almost tempted to dismiss the case as hopeless, or at least as one in which but little good could be effected. In a few days more, as there seemed some distinct signs of amendment, I determined to persevere further. The blister was occasionally repeated behind the ears, and at the end of the third week of trial the improvement in vision was manifest and decided. On the 2nd November the dose of strychnia was increased to one-eighth of a grain each night at bed-time, everything else remaining the same. On the 6th he reported himself vastly improved; says he can easily count the cars in the corn-market,

at some distance from the hospital, and can see very plainly the dial-plate of the Lunatic Asylum clock about a quarter of a mile off. He can distinguish the letters on it, but not read them, but this indeed would be difficult to any eye. From this time forward he continued to improve rapidly, and was dismissed completely cured on the 23rd of December.

I think there can be no doubt that such cases as these originate in that inflammatory affection of the nervous matter which we call retinitis. From a consideration of their history and progress, it is evident that there are two conditions which destroy or interrupt the functions of the nerve—first, the state of inflammation, with its accompanying circumstances, whether these operate through the deposition of lymph or by the mere pressure or tension of hyperæmia; and second, the loss of power which remains when this declines or has been subdued, whether this arises from simple debility of the nerves, or paralysis, or some other unknown condition. It is in the latter of these states that strychnia seems particularly valuable, and which it appears especially adapted to correct. It seems to me, however, that it is of very great importance to make sure that all traces of inflammatory action are entirely removed before the use of strychnia is entered upon, and I am not quite certain that, in one or two other cases in which the remedy failed, I persevered long enough with the antiphlogistic measures to render the chances of success the best possible. The condition of the retina in these cases, both before and after treatment, would be a very interesting study for the ophthalmoscope. I have had as yet no experience of the use of this instrument, but it is possible that in expert hands it may enable one to distinguish those cases in which such a mode of treatment is likely to be successful.

In most of the cases of this kind which I have seen recorded, the endermic method has been adopted. It remains for experience to decide which is preferable; but there can be no doubt that in all such disordered states of the stomach as would render the internal administration of strychnia questionable, the endermic method should be the one chosen.

In the case I have just given, as in the former one, the small quantity of the strychnia that effected a cure was remarkable. In O'Donnell's case, the quantity used was somewhat less than eight grains in eight weeks, or less than a grain per week. In this of Denis Collins, the whole quantity given was exactly eight grains in ten weeks, or eight-tenths of a grain per week.

Art. XIX.—*Obstetric Morality.* By Fleetwood Churchill, M. D., M. R. I. A., Fellow and Professor of Midwifery in the King and Queen's College of Physicians in Ireland, &c. &c.

TO THE EDITOR OF THE DUBLIN QUARTERLY JOURNAL OF MEDICAL SCIENCE.

Sir,—In the Number of the "Dublin Review" for October, 1858, just published, there is a notice of the paper on "Obstetric Morality" you did me the favour to insert in your last. I cannot say that it reflects much credit on the author either as a literary composition, or a specimen of accurate reasoning. It contains a considerable amount of what reads very like bombast, but, so far as I can perceive, he has not fairly answered any of my propositions. He has evaded some, and misrepresented others; and mixed up with his observations some flippant attempts at wit, which might have been better omitted. I shall not attempt to prolong so useless a controversy, but, with your permission, merely make a few observations on two or three points.

1. In the first Review the author states, and in this he everywhere implies, that children dying or destroyed in utero *are lost*, and he speaks as if this were the declared doctrine of the Roman Catholic Church. Now I am informed that there is no authoritative declaration on the subject, and I shall be obliged to him if he will point it out to me.

Again, he accuses me of having no regard for the souls of the children destroyed by craniotomy, because I deprive them of the sacrament essential to salvation; yet he gives his full sanction to an accoucheur delaying the operation until the child dies. Will he explain to me in what the condition of the soul of a child destroyed by craniotomy differs from that of a child left to die in utero?

2. The reviewer avails himself to the full of the autocratic we, and speaks *ex cathedra* without a shadow of doubting as to the authorities of his Church. Did he ever hear of a work published by Migne, entitled, 'Theologiæ cursus completus,' (Paris, 1839). If he will do me the favour to turn to page 483 of vol. xiv., in a note he will read as follows concerning remedies likely to cause the death of the fœtus:—"Licebit administratio remedii, ... si nulla spes affulgeat prolem baptizandi, nam salus matris ad minus tanti est quam salus temporalis et momentanea prolis, imo magis preponderat: illicitum erit, si spes probabilis affulgeat baptizandi prolem."

Again, if he turn to the works of St. Thomas Aquinas

(Paris, 1839, vol. vi., p. 253), he will find this sentence:—"Si certum esset, non adhibito remedio, fœtum cum matre periturum, et e contra certum aut probabile, adhibito remedio, matrem salvami vi, multi existimant quod tunc liceret adhibere remedium, quia in his circumstantiis vix in æstimationem venit salus prolis certo perituræ, indeque jus habet mater sibi consulendi." It is only fair to say that St. Thomas is himself doubtful on the point, but it is quite enough for my purpose that "multi existimant."

Lastly, St. Alphonsus Liguori, in his 'Homo Apostolicus,' 1837, p. 186, says:—"Puto omnino tenendum . . . . præbere medicinam matri cum periculo fœtus animati licere in eo solo casu, quo nulla spes appareat rationabilis de prolis vitâ, ut possit baptizavi, post matris mortem."

Now, one of two things is certain, either that I do not deserve the hard epithets the Reviewer has bestowed upon me with so liberal a hand; or, that they apply with equal justice to these authorities. Let the Reviewer take his choice.

3. The Reviewer speaks of my "anxiety for my pet operation." Now, considering that in the paper he was reviewing I have spoken of it as a sad necessity, one to be avoided by every possible means; that I have characterized its unnecessary employment as murder, and considering that my defence of the operation in certain cases was drawn from me by the Reviewer himself,—I must say that I consider the phrase both uncandid and dishonest. If the Reviewer read either my book or pamphlet carefully, he must know that this fearful operation is no "pet" of mine. The present generation has witnessed a happy change in the comparative frequency of operations with the forceps and craniotomy: formerly there were three or four of the latter to one of the former in the Rotundo Hospital; for many years past, these proportions have been just reversed, and the use of the forceps has so far superseded craniotomy. About twenty years ago I published a paper on the forceps, and since that time all my efforts, both by writing and lecturing, have had the same object in view, viz., limiting the use of the crotchet, and advocating the substitution of the forceps in every possible case, for the express purpose of saving the child. It would hardly be becoming in me to estimate the success of these efforts, but I am sure that my professional brethren will testify to the fact, that I never recommended or employed craniotomy, the child being alive, without first trying the forceps.

4. The Reviewer is, I think, justly indignant at craniotomy being performed "a third, fourth, or fifth time, or oftener,"

upon the same woman. Such cases are, of course, very rare; but the Reviewer is wrong in supposing them to be little touched upon in obstetric books. These are exactly the cases in which premature labour is recommended, and the medical attendant ought to insist upon this, with the alternative of declining to attend the patient, if her obstinate refusal involve such a repetition of craniotomy.

5. The Reviewer has brought together a considerable number of successful cases of the Cæsarean section; and from them, no doubt, very encouraging inferences may be drawn as to the result in future suitable cases. But he has very disingenuously omitted to notice the difference I pointed out to him between this grave operation, performed after previous notice and adequate preparation, and with sufficient assistance; and the same operation performed *impromptu*, without anticipation, and with little assistance. Until he proves that there would be no greater risk in the latter case than in the former, even he would not dare to recommend it as a substitute for craniotomy, if he had any practical experience; very certain I am, as I said before, that any man acting on the suggestion of this anonymous authority will find juries enough to convict, and judges to sentence him; and if he find any consolation in "martyrdom," which the Reviewer promises him, it will not be derived from the sympathy of either the husbands or wives of this country. But there is no fear; there will be no martyrs in this cause, and the proposal will remain as one of the curiosities of medical literature.

I will not trespass further upon your pages. There is little, indeed, in the Review that requires an answer. In my last paper I asked for some statistics, which he has not given, in support of a startling assertion made by the Reviewer, which I could not credit. Now I will ask him, and I hope not equally in vain, if he wish his statements to have due weight, and if the truth on this important question be his object, to publish his name, that we may meet on equal terms, as I object to an opponent who "hides behind stone walls."

I have the honour to be, Sir,
Your obedient servant,
F. Churchill.

15, *Stephen's-green.*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. *Twelfth Report of the Commissioners in Lunacy to the Lord High Chancellor of England.* With Appendices. Ordered by the House of Commons to be printed, June 15, 1858, in return to an order dated June 11, 1858. (Colonel Clifford, M. P.) Blue Book, 8vo, pp. 56.

2. *The Medical and Legal Relations of Madness, showing a Cellular Theory of Mind and of Nerve Force, and also of Vegetative Vital Force.* By JOSHUA BURGESS, M. D. London: Churchill. 1858. 8vo, pp. 283.

3. *The Human Mind in its Relations with the Brain and Nervous System.* By DANIEL NOBLE, M. D., Visiting Physician to the Clifton Hall Retreat, Consulting Physician to the Manchester Ear Institution, &c., &c. London: Churchill. 1858. 8vo, pp. 157.

4. *Report of the Londonderry District Hospital for the Insane, to March* 31, 1858. By WILLIAM ROGAN, M.B., Resident Physician. Pamphlet, pp. 16.

5. *The Seventh Annual Report of the County Asylum for the Insane at Colney Hatch.* D. F. TYERMAN, M. R. C. S., Medical Superintendent, Male Department. W. G. MARSHALL, M. R. C. S., Medical Superintendent, Female Department. Pamphlet, pp. 194.

6. *Twentieth Annual Report of the Suffolk County Asylum for the Insane, to December*, 1858. By JOHN KIRKMAN, M. D., Physician-Superintendent. Pamphlet, pp. 36.

7. *Seventh Annual Report of the Wilts County Asylum for the Insane, from January* 1*st to the end of the Year* 1857. By JOHN THURNAM, M. D., Physician-Superintendent. Pamphlet, pp. 41.

8. *Tenth Report of the Somerset County Asylum for the Insane, from January 1st to the end of the Year* 1857. By Robert Boyd, M. D., Physician-Superintendent. Pamphlet, pp. 69.

9. *Second Annual Report of the State of the United Asylum for the Insane for the County and Borough of Nottingham, and the Forty-seventh of the original Institution, for the Year* 1857. By W. P. Stiff, M. B., Physician-Superintendent. Pamphlet, pp. 24.

10. *St. Luke's Hospital for Lunatics, for the Year* 1856. Henry Stevens, M. B., Physician-Superintendent. Pamphlet, pp. 34.

11. *The Necessity for some Legalised Arrangements for the Treatment of Dipsomania, or the Drinking Insanity.* By Alexander Peddie, M. D., F. R. C. P. E., &c. Pamphlet, pp. 36.

12. *Mind and Body; a Discourse on the Physiology of the Phrenical Action of the Cerebrum.* By Robert Jamieson, M. D., President of the Medical Chirurgical Society of Aberdeen, Physician-Superintendent of the Royal Aberdeen Asylum for the Insane. Pamphlet, pp. 24.

13. *Thirty-first Annual Report of the Perth Royal Hospital for the Insane, to June,* 1858. By W. Lauder Lindsay, M. D., Physician-Superintendent. Pamphlet, pp. 63.

14. *Thirty-seventh Annual Report of the Directors of the Dundee Royal Asylum for the Insane, for the Year* 1857. By T. T. Wingett, M. D., Physician-Superintendent. Pamphlet, pp. 43.

15. *Medical Report of the Aberdeen Royal Asylum for the Insane, for the Year* 1858. By Robert Jamieson, M. D., Physician-Superintendent. Pamphlet, pp. 24.

16. *Report of the Pennsylvania Hospital for the Insane, for the Year* 1857. By Thomas. S. Kirkbride, M.D., Physician-Superintendent. Pamphlet, pp. 48.

17. *Fourteenth Annual Report of the Managers of the State Lunatic Asylum, January* 7, 1857. John P. Gray, M. D., Physician-Superintendent. Pamphlet, pp. 46.

18. *Reports of the Provincial Lunatic Asylum, Toronto, from 1st July,* 1853, *to 1st March,* 1857. Pamphlet, pp. 46. And *Report for the Year ending March* 1, 1858. Pamphlet, pp. 23. By Joseph Workman, M. D., Physician-Superintendent.

19. *The Journal of Psychological Medicine and Mental Pathology.* Edited by Forbes Winslow, M. D., D.C.L., President of the Association of Medical Officers of Asylums and Hospitals for the Insane. Nos. 9, 10, 11, and 12. New Series, for the year 1858. London: John Churchill.

20. *The Asylum Quarterly Journal of Mental Science.* Published by authority of the Association of Medical Officers of Asylums and Hospitals for the Insane. Edited by Charles Bucknill, M. D., Lond. University, Physician-Superintendent of the Devon County Asylum for the Insane. London: Longman & Co. Quarterly Numbers, 24, 25, 26, and 27, for the year 1858.

21. *The American Journal of Insanity.* Edited by the Officers of the New York State Asylum. April, 1858. Utica: New York State Lunatic Asylum.

22. *Twenty-eighth Annual Report of the Belfast District Hospital for the Insane, to March* 31, 1858. By Robert Stewart, M. D., Physician-Superintendent. Pamphlet, pp. 47.

23. *Medical Opinion in the Parish Will Case.* By Pliny Earle, M. D. New York. 1857. Pamphlet, pp. 50.

24. *On the Causes of Idiocy.* With an Appendix. By Dr. S. G. Howe, dated February 26, 1848. 8vo, pp. 79. Edinburgh: Maclachlan and Stewart. London: Simpkin, Marshall & Co.

25. *Report of the Commissioners of Lunacy on Insanity and Idiocy in Massachusetts, U. S. A.* By Edward Jarvis, M. D. Dorchester, Massachusetts, 1855. 8vo. pp. 213.

26. *Reports of the Asylums for European and Native Insane Patients at Bhowanipore and Dallanda, for* 1856 *and* 1857. Calcutta: 1858. 8vo, pp. 70.

1. The Commissioners in Lunacy of England, in their "Twelfth Report," to the 31st March, 1858, give the proceedings of their labours for the year then ended in their usually succinct and business-like manner, entering into detail in all those matters which demand this at their hands, and condensing into due and reasonable proportions such as comparative brevity appears the most suitable for. The Commission itself has been without any change in its *personnel* since last year, and consists of eleven members, headed by Lord Shaftesbury as Chairman, with four other honorary, and six paid Commissioners, half of whom are medical, and half legal; the paid Commissioners

always visiting in pairs, a medical one and a legal one together. The lawyers are very clever and ingenious in managing to get so much of the fat patronage of the land into their hands. The Benjamin's portion which they have possessed from time immemorial in the law proper is a great fact, and yet this does not come up to their grasping powers, but they must poach upon the medical profession, which is confessedly low in the scale of patronage. Even the half-dozen of stipendiary Lunacy Commissioners must be divided with the bar-men, a division which, we think, is here exceedingly out of place, inasmuch as we are quite at a loss to understand how the education of a barrister-at-law can be brought to bear upon the inspection of the insane, or what lawyers have to do with their management in any respect. Much better and more to the purpose would it be that the whole six of the salaried Commissioners were of the medical profession, and that number would be few enough, if even sufficiently numerous, for the requisite official visitation of the insane in England and Wales; the complaint at present being, and we believe justly, that for the work to be done there is not a sufficiency of a fitting inspectional staff.

In regard to new accommodation, providing for the pauper insane in public asylums, we find it stated in this Report that so many as eight asylums are in progress of erection; namely, one for Cumberland, to contain 200, to be completed in 1860, at a cost of £28,000. Durham, for 312 inmates, to be ready next month (December); cost £31,480. Carmarthen, 270 inmates, time of completion, uncertain; cost to be £45,835 4*s*. Bristol, 200, to be in operation next year; cost, £30,000. Sussex, 400; March 1, 1859; cost £51,843, exclusive of bedding, furniture, &c. Cambridge, 250, which was to have been completed in May last; cost, £49,670. Beds, Herts, and Hants, 504; time of opening, uncertain; cost £95,000. Northumberland, 200, which was to have been ready in September last; cost, £50,000. These eight asylums will afford accommodation for a total number of 2336 patients of both sexes, nearly equally divided, at a total cost of £361,828 4*s*., which is, no doubt, a vast expenditure of money, but absolutely requisite, and rather too long delayed in its particular appropriation. At the date of the Report there were in operation 33 county, and 4 borough asylums, with an aggregate population of 16,331 inmates, to which additions were in progress for the reception of 2481; these, with the new county asylums above eunmerated, would enable asylum care to be afforded to 21,148 inmates, accommodation, however, which, though so apparently ample will, ac-

cording to a calculation of the Commissioners, not only be fully taken up by the 1st of January, 1860, but by that time, judging from past experience, 1830 additional beds would require to be provided for. This, at first sight, might appear a very alarming state of matters, and lead to the supposition that insanity was greatly on the increase; but we believe there are no real grounds for this inference, the truth being that it is only just now the public mind has been sufficiently aroused to look after the proper care and treatment of the pauper insane, who hitherto have been so largely scattered about in workhouses and "licensed houses," instead of being, as is now happily taking place, provided for in county institutions, specially set apart and appointed for their due treatment and comfortable maintenance, and to effect which the public money could not be more righteously spent. To do the Commissioners, as a public body, but justice, they have been untiring in their efforts with, and calls upon, the authorities to have this most important desideratum accomplished; and great indeed, is the credit which they deserve for this faithful discharge of their duty to the public, and their suffering fellow-creatures.

During the year 1857 the county and borough asylums had under treatment a total number of 16,792. Of that number, 1854 were discharged recovered. The deaths from ordinary causes amounted to 1538; from suicide, to 7 only; and from accidents or violence, to 9. On the 1st of January, 1858, the total number remaining under treatment was 15,125, of whom only 1829 were deemed curable; thus leaving a residuary mass of incurables of 13,296 as a legacy upon the bounty of the country during the term of their natural lives.

The Commissioners' persevering and most proper efforts for the founding of a State Criminal Asylum, similar to our own at Dundrum, have at last, we are rejoiced to find, been crowned with entire success, a site consisting of 290 acres of land having been purchased for the small sum of £6000, on Bagshot Heath, in the county of Surrey, which would appear eminently well calculated as to healthfulness of locality, &c., for this special object. The building of the Asylum was to be commenced with all available despatch, so that before long it may be expected to be in full operation, which will be a great relief in many ways to the ordinary asylums, in which the presence of criminal inmates was so injurious to the other patients, and so much to be deprecated in every point of view. In our last year's[a]

[a] Vol. xxiv., No. 48, page 357.

Review, we took occasion to animadvert in the strongest manner upon the unaccountable and unpardonable neglect of the Government, in respect of providing the best accommodation the country could command for its soldiery, when, in the discharge of their hazardous and invaluable services at home and abroad, they were stricken down by insanity. We had fully hoped, that ere this the authorities had been aroused to action in this gross and scandalous neglect of their duty to the military class of the insane, and that the feeling appeal made on this subject by the Commissioners, in their Report last year, would, as a matter of course, and for the honour of the country, have been at once attended to. But great indeed has been our amazement to see that no step whatever has been taken up to the present time to remedy this crying evil, one which it is a disgrace to our common humanity to have ever had in existence.

The Commissioners thus pointedly and effectively refer to this matter:—

"The question of adequately providing for the care and treatment of insane soldiers remains still in abeyance. Our opinion on the many evils arising from the defective character of the existing arrangements for the accommodation of soldiers labouring under this malady has been expressed in many former Reports, and we have contrasted those arrangements with the excellent provisions made for insane sailors at Haslar Hospital. We are quite at a loss to understand why there should be so marked a difference between the two services, in the presence of the same calamity; and it will not be held beyond the limits of our duty, which we regret the necessity we have been under, of so frequently and so strongly animadverting on the continuance of this painful contrast, to add the expression of a hope, that, amid the general sympathy and attention awakened lately to the condition of the soldier, the absence of all proper human provision for his treatment under a disease to which accidents of service and changes of climate too frequently expose him, will not be much longer overlooked!"

If in the ensuing Session of Parliament, some independent Member of the House of Commons have not spirit enough to call upon the Minister at War for an explanation of this continued negligence in the discharge of a most serious and important duty, we shall have much reason to fear, that the philanthropy, humanity, and authority of that assembly have fallen to a low ebb indeed.

The Report refers to the Asylum at Haverfordwest[a], for its

[a] This is a species of hybrid insane hospital, being neither properly a county nor a borough institution, but one *sui generis*, and containing 33 patients only.—Rev.

continued defective and generally unsatisfactory state of management; its abuses and overt acts of neglect being so great as to call for the suspension of its medical officer, and the appointment of another in his place. The Northampton General Hospital for the Insane is also particularized for "certain alleged acts of cruelty and ill-usage towards patients," which called for special inquiry before two of the Commissioners, at the instance of the Home Secretary; the result of the investigation being, "that serious abuses and acts of violence had been committed by the attendants in the refractory male ward of the hospital, and that sufficient had been proved to justify and render imperative the immediate dismissal of the attendants;" who were dismissed accordingly.

The above are the only instances in which any deviation from kindly treatment has been noted by the Commissioners, and it is worthy of especial record, that not a single county or borough asylum is hinted at, to say nothing of being charged directly or indirectly, with any or the least dereliction of duty, each and all of them being presided over by physicians superintendents of high professional character, and of the most humane and indulgent conduct to their peculiarly afflicted and interesting charge. The Commissioners refer with regret to the circumstance of the Governors of Guy's Hospital having determined to close entirely the lunatic wards of that institution, and having already refused to receive any more female patients. The Commissioners, we apprehend, were rather exacting and interfering, if not crotchety, with the authorities of Guy's, in respect of their wards for the insane, which were an immense boon, being for the treatment of a select number of female patients of the middle classes, without any charge, and who were provided for in the most comfortable manner. The Commissioners state that they made an earnest appeal to the Governors on behalf of a lady "as one who had special claims upon their favourable consideration, and falling peculiarly within the benevolent scheme of the founder of Guy's," but all to no purpose; the snubbed Governors now snubbing the Commissioners in return, by refusing to admit the patient and permitting her, as the only alternative,—a very bad one,—to be transferred to the Workhouse. The Report also takes pointed notice of the unsatisfactory condition of single patients, a large number of them being in charge of medical men and others without any legal authority, and who are consequently deprived of the benefits of all independent supervision. This is a state of things which most assuredly calls loudly for redress.

Having drawn so largly upon the Report of the Commis-

sioners in reference to public asylums, we must not conclude our review of it without shortly noticing the metropolitan and the other provincial licensed houses respectively. The former amount to 37, and are thus licensed:—To medical men 24 (6 of whom are associated with females as co-licensees); non-medical men 5; females solely, 8, 4 of whom are styled "Mrs.," and 4 "Miss." The total number under treatment in these licensed houses for the year 1857 was 3647 (1648 males, 1999 females). The total number of discharges for the same period was 740 (326 males, 414 females). Total recoveries were 298 (125 males, 173 females). The deaths amounted to 276 (160 males, 116 females). The cases of suicide to 2 (males). There remained under treatment on the 1st of January, 1858, 2623 (1167 males, 1456 females), of whom those deemed curable were 325 (135 males, 190 females). Five of the above licensed houses received pauper patients, viz.:—Bethnal House, 329 of the pauper class, and 145 private; Grove Hall, 168 and 184, pauper and private respectively; Camberwell House, 266 pauper and 61 private; Hoxton House, 237 pauper and 95 private; Peckham House, 317 pauper and 49 private. The largest strictly private establishment (licensed to Dr. Williams) is Pembroke House, Hackney, and contained 115 inmates; and the smallest, Clarence Villa, Brompton (licensed to Samuel Batten), had but two patients (males).

The provincial licensed houses amounted to 77, 14 of which were for both private and pauper patients, and contained an aggregate number of inmates of 2697 pauper and 1497 private patients. The largest number of inmates (private and pauper) was at Fisherton House, Wilts (licensed to Dr. W. C. Finch), it containing 316, viz., 78 private, and 238 pauper. The largest entirely private establishment was at Brislington House, Bristol (licensed to the Drs. Fox), which contained 87 inmates; the smallest at Rook Nest, Wakefield (licensed to Dr. Atkinson), having but a single patient. 45 of the above provincial houses were licensed to medical men, 19 to non-medical men, 11 to females (10 "Mrs.," 1 "Miss"), 1 to a "Mrs." and a layman (not husband and wife), and 1 to a medical man and a spinster, conjointly. We have on former occasions[a] expressed a decided opinion as to the impropriety of the insane of any class being in the charge of any party but a regularly educated member of the profession; and now again we feel called upon to repeat that opinion. It is, we consider, only too well calculated to make the impression that mere gain or lucre is the primary

[a] See vol. xvi., No. 32, page 394; and vol. xx., No. 40, page 372.

object in view, and not the benefit of the patients so circumstanced. If the law be deficient on this point, by not allowing the Commissioners in Lunacy to withhold a license from any but a medical man, the time has fully arrived that so serious a defect should be rectified, and we hope it will, when next the lunacy laws come before the Legislature for amendment. We close our review of the Commissioners' Report with the annexed usual "Summary," which it contains; and in taking leave of their Report, we may observe, that though it is a Blue Book deserving of much praise, and containing no small amount of matter of a most interesting and important kind, yet, it is our disinterested and deliberate opinion, that its compilation and contents generally, as compared with the Reports of the Inspectors of Asylums in Ireland, fall considerably short of the latter. We do not make the comparison in any invidious spirit, but honestly, and with the view of suggesting the Irish Reports to the attentive consideration of the Commissioners. We feel assured that they will have a model before them from which they may glean very useful information, and not a few practical hints that might be turned to good account in their future "Blues." Another observation we have to make before parting with the English Commissioners, for another year, and then greeting them, as we hope, with a hearty welcome. It is simply this: that we desire to see them less crotchety, and more stable in purpose than hitherto we have perceived them to be as a body. We now allude more especially to unsettled views in more ways than one on their part. Shiftings and waverings, even with individuals, soon lose for them all confidence and respect for their opinions; how much more will not a public body of men find themselves deprived of their *prestige* who evidence feelings in this way? The Commissioners' crotchets and fault-findings, we have already stated, would not be submitted to by the Guy's Hospital authorities; and the bad consequence of this martinetism has resulted in the closing of the "lunacy wards" of that great and wealthy establishment, and thus debarring female insane patients of the middle class of life from receiving the important benefit thereof. Let the Commissioners avoid for the future this hyper-officialism, which will ultimately recalcitrate upon themselves, and cause great and just dissatisfaction. Official powers are given to be used, not to be abused. The Commissioners, we consider, have failed in the *fortiter in re* by giving way to public asylums, now in progress of building, containing more than a maximum number of 250, which at one period they approved, but are now sanctioning them to have 500 beds; as also, that these impor-

tant institutions should not exceed two storeys in height, but which are now permitted to be three, contrary to the advice of the most experienced and competent in such matters. We might extend these observations, but for the present we prefer not doing so, and shall here leave them, merely stating that what we have said we have intended in the best spirit, and hope it will be received in the same.

Summary.	Private.			Pauper.			Total Males.	Total Females.	Total Lunatics.
	Males.	Females.	Total.	Males.	Females.	Total.			
Asylums, ...	134	98	232	6,797	8,134	14,931	6,931	8,232	15,163
Hospitals, ...	818	759	1,577	95	79	174	913	838	1,751
Metropolitan Licensed Houses, ...	676	630	1,306	490	827	1,317	1,166	1,457	2,623
Provincial Licensed Houses,	754	743	1,497	603	547	1,150	1,357	1,290	2,647
Royal Naval Hospital, . .	126	..	126	..	..	..	126	..	126
	2,508	2,330	4,738	7,985	9,587	17,572	10,493	11,817	22,310

295 of the above (171 males, 124 females) were "found lunatic by inquisition;" and 633 (490 males, 140 females) are given as of the "criminal" class of lunatics.

2. The volume of Dr. Burgess on the "Medical and Legal Relations of Madness" is of tolerably ample dimensions (it numbers nearly 300 pages), embracing a considerable variety of topics, in connexion with the general subject, and is evidently the production of one who has not been without extensive acquaintance with the matters on which he treats. It comprises what may be styled a series of essays on the physiology and pathology of insanity, preparatory to some judicious observations on the legal view of this disease, and concludes with some useful and practical directions as to its treatment. We cannot but express our opinion that he might have improved the title of his work by substituting for the word "Madness," a more professional and less vulgar term; as well as that a good deal of condensation in the general treatment of the topics handled, would have tended to render the volume not alone more readable, but also practically useful. The author's views on the legal question are sound and practical. He does not fail to expose the highly unsatisfactory and unsettled state of our laws, both in the theory and in the practical application to the class of sufferers under consideration, and advocates the appointment of secondary courts of jurisdiction or inquiry, as by commission, in the case of criminal lunatics, as well as legal, or in suspected cases, and in

this suggestion we are strongly disposed to concur. The treatise is illustrated by a large number of *cases*, many of which are singular and interesting, and well adapted to reflect light on a subject confessedly requiring all the aid which practical experience, as well as scientific investigation, can possibly cast upon it. On the whole, we can recommend a perusal of its contents to all who are engaged in endeavours to ameliorate the condition of the insane.

3. Like all that has appeared on kindred subjects from the pen of Dr. Noble, his work, as noted in our list, is characterized at once by its soundness of professional scholarship, candour, and common sense. The psychological part of the work manifests no ordinary degree of correctness in view, as well as clearness of statement; the latter quality being one which (as far as our experience goes) does not always—perhaps, indeed, we might say very often—manifest itself in works of a similar character, and of a much more pretentious caste. As regards mental science, Dr. Noble may, perhaps, be classed among those of the Kantian or Transcendental school, but his accurate mind and sober sense prevent him from following such guides into any too far exalted or aërial flights: the consequence is, that the soberest thinker, who has at all duly thought or extensively read on the subject of mind, will discover nothing here which is calculated to offend. The physiological portion of the work is mainly based on the views of Dr. Carpenter, to whom the author, with creditable candour, confesses his obligations, while with equally creditable independence of view, he differs from him on some points.

Were we to specify any portions of this able volume as worthy of more particular attention, we would refer to Dr. Noble's exposition and theory of consciousness (in chap. v.) and his very admirable vindication of the exalted science which he himself so honourably pursues from the unfounded charge of materialism (too often and too recklessly brought against it), in the concluding chapter, which latter we think deserving of being transcribed in full, and which is as follows :—

"In propounding the foregoing psychological doctrines, I have striven to correlate them with our best established teachings concerning the brain and nervous system; and there *knowledge* upon the subject is defective, with some probable hypothesis and rational speculation. It would be too much to say that the physiological psychology is complete, and to be relied upon in all its parts, or that it is competent to explain all the difficult questions which arise in connexion with this interesting topic. I think, however, that, as a

whole, it is recommended to us by the highest probability. It rests upon a wide induction of facts; and where its propositions are not demonstrable, they have, I think, verisimilitude. Whatever alterations in detail may hereafter become necessary, as the result of ulterior investigation, there can be but little doubt, I apprehend, that, in its essential substance and form, it will maintain for itself that firm position which, in this country at least, it has already established.

"Certainly, in much that has been advanced, there is an insufficiency of evidence for proofs of some of the proposed views, and, upon several points the attempted generalization may be premature. But if, in our own investigations—particularly of such entangled questions as the present—we go on for ever accumulating facts merely, and never make an effort to determine the conclusion which they would seem to indicate, we shall only render the existing perplexity still more complicated. As well observed by an able and eminent philosopher of the present day:—'Although we may often err on the hasty side of generalization, we may equally err on the side of mere elaborate collection of observations, which though sometimes leading to a valuable result, yet, when cumulated without a connecting link, frequently occasion a costly waste of time, and leavet he subject to which they refer in greater obscurity than that in which it was involved at their commencement.'

"I submit, indeed, that in any attempted corroboration of psychology and physiology, it is impossible, in the present state of positive knowledge, to avoid speculation; and further, that for the attainment of clear and connected ideas of psychological pathology and medicine, it is good and useful to construct rational hypotheses, in default of complete and absolute reliable theories. But, of course, hypotheses must not have their value or their office misunderstood; they cannot rightly form a rest like an admitted axiom; they must always be held ready for modification or abandonment, when evidence appears to demand some such proceeding. Meanwhile, they serve to 'colligate facts,' and to fix the attention more inquiringly and searchingly upon phenomena that present themselves to observation or experiment. 'There is a period in knowledge,' says Dr. Crichton, 'when hypothesis must be indulged in, if we mean to make any progress. It is that period when the facts are too numerous to be recollected without general principles; and yet where the facts are too few to constitute a valid theory. Before closing this little work, I would once more guard such of my readers as are unfamiliar with discussions of physiological psychology, against the impression that science suggests the doctrine of materialism, which any multiplicity in the substance of the soul would seem to involve. If there be particular characteristics which more than others distinguish the conscious EGO from mere body, these, I conceive, are spirituality and unity of essence. Have we not the same assurance from pure consciousness, that the ME which thinks is not material —composed of parts, as we have from sense consciousness that body

is extended, and an aggregate of atoms. Indeed, there is nothing in physiological psychology which ought to suggest even the approaches of materialism. In the present sphere of existence, the mind is manifested through organic intervention: a thousand circumstances prove the fact. It is yet no more the case that the material brain is the conscious principle, and its separate parts divisions of the mind, than that the music of the lyre inheres in the instrument, and that the melodies which art can elicit from it are self-produced by the particular strings.'"

4. The Report, for the present year, of the Londonderry District Hospital for the Insane is the first one with which we have been furnished of that institution, now in operation since 1829. It is only, however, within the last two years that it had the advantage of a Physician-Superintendent in the person of Dr. Rogan, the writer of the concise and practical Report now before us. The counties from which patients are received in this Hospital for the Insane are those of Londonderry and Donegal,—that of Tyrone, which also belonged to it, having been separated from it a few years ago, and formed, together with the county of Fermanagh, into a new District Asylum at Omagh. Dr. Rogan states in his Report, that the total number under treatment during the year amounted to 302, of whom the sexes were 152 males, and 150 females. The disposal of the above was as follows, viz.:—Discharged, recovered, 53 (19 males, 34 females); ditto, improved, 18 (10 males, 8 females); ditto, not improved, 2 males; died, 13 (6 males, 7 females); remaining at close of year under treatment, 216 (115 males, 101 females). The largest number of the admissions of the year, which were 93 (42 males, 51 females), was between twenty and thirty years of age; and of the recoveries, 2 had been under treatment nearly seven years, and 12 under two months; which it is questionable was a sufficiently long probation to test their perfect restoration to mental health, the minimum period for this being considered at least three months; and some authorities aver that no decided case of mental derangement should be discharged as recovered under twelve months, which, perhaps, is in the other extreme. Supposed causes of disease were only assigned in 18 cases of the year's admissions, all the others (75) being unknown. And of those 18, 7 were attributed to "fright;" 5 to "drink;" 2 to puerperal affections; 1 to "jealousy," and 1 to "injury of head." 29 of the year's admissions were married, and 64 unmarried. The causes of the 13 deaths were as follows, viz.:—Marasmus, 6; phthisis, 3; suicide, 2; and epilepsy, 1. In regard to the suicides,—both of

whom were males, and both bent on thus terminating their miserable existence, having previously made very deliberate but unsuccessful attempts of the kind,—one hung himself with a mason's line which he had contrived to secrete when tradesmen were on the premises, and the other accomplished his object by strangling himself with the strings of a strait-jacket. The advocates of non-restraint (of which we do not profess to be of the number) will claim this, likely, as a strong proof in their favour, that mechanical restraint, in suicidal cases, is no prevention against the occurrence of so unhappy a result, but rather is a help to it, which no doubt so happened in this instance; but the same could have been accomplished, and assuredly would, by other means constantly and unavoidably at the command of the insane. We take it that there are cases of this description which no earthly means, or human foresight, can thwart the accomplishing of, and that though the very means used in this instance resulted as it did, it is no valid objection to the use of a strait-jacket when circumstances appear to demand its imposition. Dr. Rogan calls attention to a serious deficiency of water on the premises, which, in such an establishment, is an evil of incalculable magnitude, and to remedy which, neither means nor expense should be spared in having supplied in abundant quantity; he also points out the necessity of bath-rooms and lavatories being provided, the utter want of which must be an hourly evil, and very detrimental to the sanitary state of the house, and common personal cleanliness of the inmates, but which, of course, are out of the question until, first, water be at full command throughout the establishment. Dr. Rogan is an advocate, we are glad to find, of a good standard dietary for the insane as a class; but, on looking at the dietary table in use in this institution, we find that no solid meat is allowed on any day in the week, or at any period of the year, to the patients in ordinary, whose dinner meal consists of "ox-head soup" and bread on but two days in the week, and of "vegetable soup" and bread on the other five. We would be very glad to see a change made in this respect in so well-conducted an asylum as that at Derry admittedly is; and we feel quite satisfied that, so far as Dr. Rogan, its excellent Superintendent-Physician, is concerned, the defect now hinted at will be duly attended to. The expenditure of the year amounted to £5248 6*s.* 11*d.*, included in which is the comparatively large sum of £63 13*s.* 8*d.* for tobacco, an item of expense which, on hygienic principles, ought to be banished from our hospitals for the insane; and which, even in America, where that noxious

production is deemed a necessary of life, is becoming the exception to the rule as regards its use, in all ably and well managed public asylums.

5. The County of Middlesex Hospital for the Insane, at Colney Hatch, has now been in operation seven years, and had under treatment at the period of its last printed Annual Report for the year ending 1857, the large number of 1293 patients, of whom 524 were males, and 769 females. The Report before us is a large one of its kind, and copious in the way of detail and statistics, the professional portion of the latter being both carefully and elaborately prepared, and accordingly reflecting much credit upon Mr. Tyreman and Mr. Marshall, the chief resident Medical Officers of this institution, which contains within its walls such a mass of afflicted humanity. The Committee of Visitors, eighteen in number, occupy the first twelve pages of this official document, which, it is but right to say, is less flippant and more free from that overbearing and dictatorial spirit than we usually find to pervade visitors' reports in general, which is no small recommendation in favour of the present one, as far as regards those gentlemen, who evidence much honesty and good sense when they say—

"That the provisions of the Act of Parliament are now so much more satisfactorily complied with by the more ample and far more interesting details furnished by the Medical Superintendents and other heads of departments, that unless any special occurrences have taken place which belong to the institution generally, rather than any particular branch of it, little remains to be said by the Committee which is not better told by the officers themselves."

This is an excellent example for other committees of asylums to follow, but who, we fear, are so prone to write themselves into notoriety, and appear great men at the expense of the labours of their hard-worked medical officers, over whom they would fain be lords and masters to the utmost, that we have little hope of seeing the modest bearing of the Colney Hatch Committee of Visitors copied to any considerable extent by their brethren.

The Visitors in their Report lament—

"That the demand for admission is still very greatly in excess of the accommodation existing at the two asylums; and that in spite of the increased numbers now provided for, amounting to nearly a 100 in the last two or three years, there would seem to be little relief comparatively with the demands of the parishes. Indeed, the number of applications for admission of patients supposed to be

curable, and not afflicted with paralysis or epilepsy (all of whom are received, whether there be a vacancy or not) has shut out a vast proportion of the ordinary cases."

This, no doubt, is a state of things much to be deplored, and requiring an immediate remedy; but we much doubt if the remedy now being adopted by the authorities of both this Asylum and its sister one at Hanwell will be a satisfactory one; namely, further extending their already overgrown establishments, which contain inmates quite sufficient to be spread over about eight asylums, thus giving nearly 300 to each, although it is generally admitted by the best authorities that, in order to do anything like justice to either patients or officers, a larger number than 200 inmates should not be under any one roof. We have in our last[a] and former Reviews expressed our opinion on this subject, and need not now enlarge on it further than to reiterate our strongest protest against this most pernicious system of heaping together the insane *en masse*, and thus setting an example in the metropolis which the provinces will be only too ready to follow, and so be doing an irreparable injury to a class of the afflicted which, of all others, demands that everything should be done and every means used for the amelioration, if not the cure, of the heavy dispensation it is their misfortune, not their fault, to labour under. The responsibility which those placed in the position of Visiting Justices take upon themselves is a most serious one, in closing their ears against all remonstrance on this head; and, seeing that hitherto they have so acted, the time would appear to have fully arrived for the Legislature to interfere and put bounds to the unlimited power the magistracy has been exercising in a matter of the deepest and most vital moment, not merely in a local, but in a national point of view. Passing over the lay portions, if we may so say, of this elaborated document, we come next to the separate Reports of the Medical Superintendents, and from them, did space permit, not a few extracts of great interest might be given. We are compelled, however, to summarize, and to content ourselves, on the present occasion, by stating that the total number discharged, recovered, and relieved, of those under treatment during the year, as already referred to, was 147 (73 males, and 74 females); and the deaths 116 (67 males, and 49 females). The principal cause of death is assigned to general paralysis, viz.:—43 (28 males, 15 females); next, phthisis, 21 (13 males, 8 females); epilepsy, 15 (8 males, 7 females); natural decay, 14 (6 males, 8 females); bronchitis,

[a] Vol. xxiv., page 352.

6 (4 males, 2 females); peritonitis, 3 (2 males, 1 female); suicide by hanging, 1 (a male); maniacal exhaustion, 3 (1 male, 2 females); apoplexy, 2 (females); other causes, 8 (4 males, 4 females). One of the females, still under treatment, is stated to have made several attempts to pluck out her eyes, and to sew her eyelids together, besides bruising her hands in striking them against the fire-guard, or beating them with a poker. A distinctive feature in this Report of the Colney Hatch Asylum is one entitled, "Meteoro-medical Records," which contains much that is interesting, both to the professional and general reader, being drawn up with much scientific care and ability. We find also a special Report from the matron, which we consider quite beside the duties of such an official, and only too well calculated to place her in a false position, and bring the whole Report into ridicule. Why not have Reports from the cook and the laundress also? One from the former might, perhaps, be a very useful record. The "Steward's Report" is another of the documents in this Report which bears about it an absurd air of pretentiousness and importance from a mere subordinate.

The total expenditure incurred in the support of this immense establishment for the past year was £38,774 14*s.*, the largest item in it being for meat, viz., £4705 2*s.* 8*d.*; the next, for malt, hops, and beer, viz., £2147 10*s.* 5*d.* In the pernicious articles of tobacco and snuff a sum of £332 12*s.* was spent, against which we have strongly to protest; and on the other hand, to denounce now, as we have done before[a], the parsimony practised in remunerating the medical superintendents for the vast amount of labour and immense responsibility placed upon each of them. "Muzzle not the ox that plougheth out the corn," is a command contained in Holy Writ, but which has been entirely overlooked in this case; and great indeed is our surprise to find that two highly educated gentlemen, having the constantly anxious charge of 1293 lunatics, receive but £200 per annum each for labours, mental and physical, which must be unceasing and onerous to a degree. Comparisons, we know, are unpalatable; but, without meaning any offence, we feel bound to say that when the chaplain is paid a salary of the same amount; the clerk of the Asylum, £250; the steward, £190; and the clerk to the Committee of Visitors, £130, the medical superintendents, who are the mainspring and the really responsible and hard-worked officers of the institution, should receive salaries of at least £500 per annum each, with all the

[a] See vol. xxiv., page 382.

other usual advantages and allowances; and still be far from obtaining a liberal requital for the important professional services rendered by them. It is an economy of the worst kind thus to "cabin, crib, and confine" efficient officers; and sooner or later it will be found, that so great an injustice, though now submitted to, will not fail to be productive of pernicious consequences.

6. The Twentieth Annual Report of the Suffolk County Asylum, by Dr. Kirkman, its experienced and benevolent Physician-Superintendent for more than a quarter of a century, informs us that, "though the year that has passed has not been free from weighty anxieties, increased by the severe illness of some of the officers, and several of the old attendants, it is satisfactory to be able once again to report the healthy condition of the patients, and the comfort and quietude of the house." We agree fully with Dr. Kirkman in the spirit of the annexed extract, in which is embodied much that is valuable, and deserving of the best attention, coming, as it does, from so eminent an authority in the treatment of insane patients:—

"Our treatment in asylums may partake too much of class treatment, too little of individuality. There is often a stiff formality observable when all sit like school children, thereby invariably raising the medical officer to the likeness of a schoolmaster, and the only indications of convalescence in his patients are supposed to be the unbended back and the padlocked lip. Loud discourse is not inconsistent with order. In some recent suggestions there seems to be an apparent forgetfulness of the truth recognised by all sound authority, that each case requires its particular treatment. There should be variety of accommodation to meet variety of habits and fancies. Some patients, to whom the very 'grasshopper is a burden,' will prefer single rooms; others, fearful of being left alone, will entreat to be placed in companionship. It is desirable, as far as possible, to comply with each individual request; and to yield to each individual's inclination in the hope of cure."

We often hear, as an evidence of the improved conduct of asylums of the present day, of permission being given as a great boon to their inmates to go beyond the walls, and indulge themselves by breathing the fresh air, and admiring nature in all her charms, in an extended walk in the adjoining country; but this has been no novelty to the well-cared for and really liberally treated inmates of the Suffolk Asylum, as the following paragraph records:—

"We are not in the condition of men starting afresh, but of those who have literally borne the burden and heat of the day. It

was the practice, twenty-five years ago, when the number of patients was only 150, to allow both males and females the indulgence of the free air system; they walked to Bromeswell, Sutton, Bridfield, and the adjacent villages; they attended the churches of Ufford and Melton, and, with those exceptions, we have never varied in encouraging the removal of all unnecessary restrictions."

We cannot forbear transcribing another extract from this excellent and sensible Report, the Christian spirit of which is so creditable to its writer:—

"It is hardly possible to over-estimate the value of the expressions of affectionate regard which have been made by many who have attended the funerals of their relatives and friends, at the sight of the grave of the grandchild of the Superintendent in the Asylum ground. The fact of one of his family lying among the insane has realized the conviction that a feeling of unity exists among those who have taken a lively interest in their temporal welfare, with an anticipation of that undivided union to be enjoyed by the whole household of faith, when diseases of body and of mind shall all be among those 'former things which have passed away,' and when a glorified body, a purified conscience, and a perfected reason, shall be possessed by all."

The number of patients treated during the year amounted to 377 (168 males, 209 females); the recoveries were 54; the relieved, 7; and the deaths, 36; which left under treatment, at the close of the year, 278 (122 males, 156 females). The causes of death were—exhaustion and senile infirmity, 15; phthisis, 10; epilepsy, 5; apoplexy, 2; empyema, paralysis, diarrhœa, and cardiac disease, each, 1. The year's disbursements amounted to £6100 14*s.* 2*d.*, of which tobacco formed no part, much to the credit of the institution.

7. A case of delirium tremens having been presented for admission into the Wilts County Asylum, as stated in the Report of Dr. Thurnam for the year 1857, it was refused admission, not being deemed eligible. There are great difficulties in such cases, and, strictly speaking, they do not come within the proper objects, perhaps, of an asylum for the insane; but in the absence of a fitting receptacle for such, it is a greater evil not to take them into temporary charge, and so far as, in the greater number of instances at least, furious and uncontrollable delirium is an evidence of derangement, there could be no more fitting inmates for the wholesome restraint of such establishments. We hope at no distant period to see some provision made for the due surveillance and treatment of a class of patients, for such we must deem them, so imperatively calling for the inter-

ference of friends to save them from themselves, and, perchance, be the means of restoring them to society, as sober members thereof. Another paragraph in Dr. Thurnam's practical report has attracted our attention, namely, the reference he has made to a special case, requiring to be mechanically restrained, the first, it appears, since his institution was opened, a period now of six years. The reasons assigned for this departure from the rule in operation in this Report are potent in the extreme, and our only regret in the matter is, that any superintendent should feel himself called upon to make any excuse, for it so appears to us, for imposing a strait-jacket, or any other species of temporary means, to correct perverted habits, or otherwise, any more than he would for prescribing a shower or plunge-bath, or an heroic dose of laudanum or tartar-emetic. Men in their responsible position should have the moral courage to do what they, in the exercise of their judgment and sound discretion, believe to be right, without any fear of consequences. *Fiat justitia ruat cœlum.* Another passage in the Report deserves being mentioned. We refer to what is stated in regard to "the efficiency of the water supply, and its continuance, through any needful repair of the steam-engine;" and its being "proposed to erect a supplementary pump, with a wheel or capstan, to be worked by some of the male patients, or by a horse." In Ireland it has been objected to by a Royal Commission, consisting of two Englishmen, Mr. Wilkes, one of the Medical Commissioners in Lunacy, and Professor Donaldson, C. E., that the male patients should be employed at labour of this heavy and monotonous kind; but now that a similar mode of dealing with the patients is contemplated, even in one of the best conducted asylums in England, as that at Wilts confessedly is, the custom in Ireland in this respect need not be considered so entirely *outre* and un-English.

The Wilts Asylum, in common with its congeners, was unable to accommodate the applications for admission during the past year, and consequently, we are sorry to find, is likely to undergo extension, it being sufficiently large as it is, for all useful purposes. We ventured to give a caution on this head in our last Review[a], but we are afraid the authorities are not disposed to receive the advice then tendered. We hope, however, that Dr. Thurnam will not be a willing party in the enlargement, so far as he has a voice in it.

The total number treated during the year was 414 (199 males, 215 females). The discharges in recoveries were 42

[a] See vol. xxiv., page 382.

(25 males, 17 females); 3 were removed as relieved, and 32 died; 27 of the deaths were males, and only 5 females, which was a great disproportion. The causes of deaths were:—Phthisis, 6 (males); paralysis, 6 (males); inflammation of the lungs and pleura, 6 (5 males, 1 female); exhaustion, 4 (males); carbuncle, 2 (males); diarrhœa, 2 (females); disease of the heart, 2 (1 male, 1 female); cancer of the stomach, 1 (male); perforating ulcer of the stomach, 1 (female); epilepsy and pleurisy, each 1 (male). The total payments for the year amounted to £8263 17*s.*, and we are sorry to find that the large sum of £57 14*s.* 3½*d.* was expended in tobacco, snuff, and tobacco-pipes; whereas in newspapers and periodicals only £3 4*s.* 4*d.* were invested.

8. The initiative, we are very glad to find, has been made in the County Somerset Asylum, of dispensing with the services of a matron, a vacancy having recently occurred in that office, which afforded the opportunity of ceasing and determining it by the appointment of a "head attendant of the female side" instead thereof,—a reform in the staff of hospitals for the insane which, it will be recollected, has been often advocated in these Annual Reviews. Dr. Boyd, the head of this establishment, so justly celebrated for its superior management in every respect, continues to advance with this day of progress in its conduct. He is making arrangements with the Committee for the "building of a large room for assemblies, in which a considerable proportion of the patients of both sexes may dine together," which is a step decidedly in the right direction; and *apropos* to which we may just observe that, nearly two years since, we ourselves saw this system of association in operation, and with the happiest and most civilizing effects, at the Lucan Asylum, county of Dublin, where the patients formerly domiciled in the "Hardwicke Lunatic Cells" are now most comfortably and advantageously placed, and supported by Government, under the immediate and careful superintendence of Dr. Henry Stewart. Dr. Boyd speaks much in praise of a large dormitory, containing 71 beds, a size which we cannot agree by any means with him in thinking at all desirable or worthy of imitation. No ventilation, however perfect, could, in our conception, preserve the surrounding atmosphere pure with such a number; and, setting this aside, we are clearly of opinion that congregating into one room so many human beings, and those especially the subjects of insanity, and of course more or less restlessly inclined, is entirely opposed to that quietude which is so important an ingredient for securing a sound night's repose. This

is not, we fear, progressive, but rather retrogressive, improvement in the moral and social management of our insane hospitals. We regret having to differ from so eminent and worthy a man as Dr. Boyd ; but he must forgive us for differing from him *in toto* upon this point of domestic economy in his otherwise most excellently well-conducted Asylum. The results of the year are thus given in the Report :—Admissions, 167 (93 males, 74 females) ; discharged, recovered, 72 (38 males, 34 females) ; ditto, relieved, 21 (8 males, 13 females) ; ditto, unimproved, 24 (10 males, 14 females) ; total discharged, 117. Died, 47 (25 males, 22 females). Remaining under treatment on 31st December, 1857, 358 (178 males, 180 females). In the medical treatment pursued during the year Dr. Boyd speaks approvingly of the shower-bath, and gives one case in particular, that of a very turbulent female, in which its frequent application appeared to produce the best effects. Opium was given with decided benefit in some cases of melancholia attended with sleeplessness and a reluctance to take food. The preparation used was prepared by macerating for a month, 1 part of opium in 1 of hydrochloric acid, diluted with 19 parts of distilled water. The liquor, being filtered, is supposed to be of the same strength as the tincture, but has a stronger odour of the drug, and keeps very well. The largest quantity taken by one patient was half an ounce in twenty-four hours, which produced the full narcotic effect. Dr. Boyd states that this preparation is less stimulating and better suited for the insane than the pharmacopœial tincture. Cod-liver oil was found useful in cases of marasmus, and tincture of sumbul in epileptic and hysteric cases. This Report is, as usual, altogether a very able and practical one. The expenses of maintenance for the year amounted to £8589 15*s.* $0\frac{3}{4}$*d.*

9. The Nottingham Asylum for the Insane had, according to Dr. Stiff's Report, 307 patients in its charge during the past year, 157 being men, and 150 women. The recoveries which took place during the year were 28. 6 were discharged, relieved; 3 not improved; and 23 died; which left in the house, at the close of 1857, a population of 247 (130 men, and 117 women). This is one of the exceptions in which the males preponderate over the females, the reverse being generally the case. Dr. Stiff's Report has the following judicious and sensible observations on the subject of restraint, which we give with much pleasure :—

"The heading of 'Important Occurrences of the Year' may be briefly disposed of. There have been no inquests, no serious acci-

dents, no mechanical restraints employed. In making the last statement, I wish particularly to guard myself against being supposed to advocate the extreme views which have been promulgated amongst the public respecting their use—'That restraint is never necessary, never justifiable, and always injurious in all cases of lunacy whatever.' It is useful occasionally to refer to the state of medical opinion bearing upon points connected with the treatment of insanity. Extended inquiry and observation have led to the general abandonment of the extreme dictum just quoted. My doubts respecting its propriety were confirmed by experience in 1855–6. A patient who had endeavoured to drown himself before admission made further attempts after admission to destroy himself, by hanging, by strangulation, by swallowing pins, by self-mutilation when taking exercise, by dashing his head against walls, by tripping himself up when arm-in-arm with attendants, so as to produce concussion; by refusal of food for weeks, and after compulsory feeding by exciting vomiting by means of his fingers, so as to eject the food, &c. After having exhausted every means of treatment short of restraint, including special watching, it was deemed impossible to keep him alive without it. Restraint was then employed, and in a short time the patient recovered, and returned home. In a somewhat similar case, which occurred soon after, a more recent mode of treatment was adopted—the system of out-door exercise under supervision. This patient destroyed himself on the first day of the experiment. I am even disposed to admit that restraint might have been employed with benefit during the past year. One patient, violent, destructive, and remarkable for her cunning and mischievous propensities, became a source of almost incessant torment, and occasionally of danger, to her fellow-patients, for several months, which a slight amount of restraint would have remedied. Other cases, intractable to ordinary management and therapeutic remedies, have been recorded in some recent Reports to the visitors of several county asylums. Emanating from disinterested and able practitioners, they are worthy of consideration, more especially as there is a disposition to ignore their occurrence."

Extracts then follow of the non-restraint Superintendents of the Hants, Kent, Norfolk, and Leicester County Asylums, and of the Birmingham Borough Asylum, having been compelled to yield to the pressure from within rather than the pressure from without, and honestly and humanely use restraint on certain special occasions. Dr. Stiff deserves great credit for thus fearlessly and independently expressing his opinion (and he is no mean authority) on a much perverted and ill understood point of detail in the management of the insane.

The dietary of this institution is good, liberal, and varied. Milk porridge, or coffee (one pint and a quarter), with bread (seven ounces), and an allowance of butter (a quarter of a pound

amongst twelve patients), are given for breakfast; cooked meat, free from bone (six ounces), with bread (four ounces), vegetables (one pound), and beer (half a pint), are served on two days in the week for dinner ; meat pie, potatoes, and beer, on one day ; pea-soup or Irish stew, bread and beer, on two days ; and ice-pudding, bread, cheese, and beer, on two more. The supper consists of bread (six ounces), cheese (one ounce), beer (half a pint), or milk porridge or tea (one pint and a half). Regular workers in the garden, laundry, &c., have in the forenoon a lunch of cheese, bread, and beer ; and later in the day a draught of beer. The total payments made in the year were £7729 7*s.* 4*d.* ; the only remark we have to make on which is, that *smoking* cost £28 and upwards; but Dr. Stiff, we are sure, will have this defect in his otherwise most creditably conducted institution removed in due time.

10. The Report of St. Luke's Hospital being so far back as 1856, and only now furnished to us, we cannot be expected to devote much attention or space to its contents. We think Dr. Stevens, its able Physician-Superintendent (who, *en passant*, we regret to see holding but a subordinate position in the printed Report before us, the two merely Visiting Physicans taking precedence of him in it, though he, of course, has all the responsibility), might have supplied it in due course, when published; but, passing this by as an oversight on his part, we are glad to observe that the improvements in this institution have, even at the eleventh hour, been considerable, and that there is an evident desire on the part of its ruling powers to persevere in this work of wholesome and needful reform to the utmost, thus yielding to the force of public opinion and the animadversions of the Commissioners in Lunacy, who, in the discharge of their duty, condemned St. Luke's in no measured terms for its shortcomings, and for its "cheerless and dreary aspect:" a most just censure, and one upon which we commented at the time[a]. We fear, however, that no transformation or improvements, be they ever so extensive, will make St. Luke's a desirable receptacle for insane patients; and that, in accordance with the suggestions in our Annual Review for 1855[b], the sooner it be given up, and a suitable one erected in the suburbs of London, the better and more humane it will be for all parties, more especially for the patients within its "cheerless and dreary" walls.

[a] See vol. xx., No. 40, page 374. [b] See vol. xxii., No. 44, page 439.

11. Dr. Peddie's *brochure* is, in substance, as the preface informs us, the author's views on the important subject of which it treats, originally presented to the Medico-Chirurgical Society of Edinburgh in the form of an address or paper, and, as we are still further informed, generally approved by that learned and highly qualified auditory. It is, moreover, the result of the author's deliberate judgment, written and formed eight years ago, although only now published. Whatever opinion, therefore, may be come to by the reading and thinking portion of the public on the views thus presented to them, the writer must certainly be exempted from the charge of any undue rashness in giving his ideas to the press, as he has literally observed the rule of the Latin critic, "Nonum prematur in annum."

There are few persons who will read the title-page of this medico-legal pamphlet, and not, we feel pretty certain, indulge in an almost involuntary criticism to the effect that Dr. Peddie has ventured on ground of extreme delicacy, if not of danger, in advocating a course which almost directly involves so apparent an infringement on that boast of every British subject, the *Habeas corpus*. But a more legitimate, if not a more natural and necessary feeling, perhaps, under the circumstances, is that of a shudder at the acknowledged state of our society, now in the nineteenth century, which warrants such a plea as Dr. Peddie feels himself called upon to set up in behalf of the safety of the majority as concerned in, and endangered by, the moral degradation of the few (if, indeed, they be the few) whose indulgence in the vice of abused stimulants has rendered such a plea necessary. The writer's conclusions are based on legal enactments (however imperfect in past times), as well as a rather large induction from fact, and are thus concisely given (p. 22):—

"I. That the man furious or delirious from drink requires immediate restraint and surveillance in an asylum or elsewhere, for some considerable time, and until he has completely recovered from the fit.

"II. That the dipsomaniac must unquestionably be considered as an insane person, as labouring under such weakness of the mental faculties, and such perversity of the moral feelings, as to warrant, not only the imposition of restraint, but its continuance for a considerable period of time, probably two or three years, so as to afford the only chance there is that self-control may be regained, and ruin averted.

"III. That the law gives too limited a definition of insanity, when it does not recognise these extreme cases as falling within its powers; that, consequently, when such cases have been treated in

asylums, they have been submitted to in some measure, or to some extent voluntarily, or been detained illegally, and in neither case so successfully as should have been under other circumstances."

For the details of the plan proposed by Dr. Peddie for bringing compulsion and legal restraint on the class of persons whom he too well describes as gradually suicidal maniacs, as well as pests to society at large, we must refer to the Appendix, wherein those details are fully given.

Without expressing our individual opinion on the entire plan, we beg to commend its attentive perusal to the consideration of all concerned, not only in the amendment and cure of the class referred to, but in the best interests of our common humanity.

12. The design of this tractate, published at the request of the Philosophical Society, to whom it was addressed, as stated at its commencement, by its author, Dr. Jamieson, "is to illustrate the presumed course of nervous movement concerned in the mental phenomena which are associated with the brain;" and in it the non-professional reader will find much to instruct and direct more advanced inquiry, while even the well-read psychologist will discover hints and suggestions which may be practically useful. The author is enabled (as he expresses his desire at the outset of his paper) to steer altogether clear of the *materialist* school; while at the same time he follows, in the line of scientific investigation, the guidance of physiological inquiry, and arrives at what we believe to be true and tenable conclusions as regards the operation of matter on mind, with its results. We strongly recommend this elementary discourse to all who are interested in the exalted subject of which it treats, and who may not have access to more voluminous treatises on the same. We have only room for the concluding portion of our learned author's pamphlet, which will give our readers some idea of the manner in which he has handled his theme:—

"The steps through which we trace the growth of the human mind are from organic movement to consciousness, from consciousness to volition, from volition to reason, from reason to the capacity of acknowledging a guiding power beyond the limits of organic life. We have looked upon phrenic effort as commencing in mere reflex action, and carried upwards successively through instinctive manifestation, voluntary motion, and rational action, to the development of a will capable of desiring to act in unison with a holier will. Humanity is the highest phasis of the relation of spirit to matter in this world, and is the human mind for all philosophic

apprehension of psychology. At the base is a vitality which is simply uterine; above that, merely animal; farther forward, only foolish; above this, diabolic; and, only when transcending mere intellectual power, graduating at humanity, and becoming capable of a life which may blossom as Christian in this world, and sow the seeds of a development that will yet be more godlike, and of a life that will be immortal in heaven."

13. The Directors of the Perth Asylum seem to be of the pachydermatous tribe of animals, no ordinary spurring appearing to be of the least avail in forcing them to give an account of their stewardship in the fiscal way, which is the principal duty they have to discharge to the public. Nothing short of the free application of the Hebrew lamedh, or ox-goad, will answer for directors of their genus; and accordingly, the unpleasant duty again devolves upon us of calling attention, as we have done on so many former occasions[a] to the strangeness of their continuing to withhold any or the least information of the distribution of the large funds with which they are intrusted. We hope this renewed hint will not be lost on the Directors, who *naïvely* inform us on the present occasion, that "no exertions have been spared on their part, both by a judicious expenditure of money, of introducing improvements, and by their own personal superintendence, to render it (the Asylum) worthy of the confidence of the public."

Had they given the particulars of this "judicious expenditure," we could have let pass for what it was worth "their own personal superintendence," and drawn our own conclusions as to their account of the former being deserved; but as they have not, we opine that the "confidence of the public," with our own, will be suspended until this needful information is forthcoming. The Report proper of the Dundee Asylum, so ably drawn up by Dr. Lauder Lindsay, its highly talented and most energetic Superintendent-Physician, we have read with unmixed pleasure, and no small profit. Its entire contents do him infinite credit, and greatly should the directors prize him as their chief, and consider their institution fortunate in no small measure by having so worthy and so well qualified a member of our profession, as its head, to fulfil the all-important behests reposed in his hands. The annexed extracts, and they are not a tithe of what might be given, are equally worthy both of perusal and study by our readers, and will bear us out that we have not overstated the value which is to be attached to this elaborate Report of Dr. Lauder Lindsay:—

[a] See Reviews on Insanity in our November issues for 1854, 1855, 1856, and 1857

"*General Paralysis.*—This is a term, we believe, liable to be greatly abused or misunderstood. It is too commonly and loosely used to include all cases of paralysis occurring in the insane, or at least those associated with exaltation of ideas, or with the monomania of pride, vanity, or ambition. The name is somewhat unfortunate; for in one, and that the most characteristic stage, the paralysis is local and limited—partial in extent; and, moreover, ordinary and spinal paraplegia sometimes merges into paralysis as general as this can be. Nor is it marked by a specific pathological condition; and it is not invariably associated with, nor characteristic of, particular forms of insanity. The term 'general paralysis,' we believe, ought either to be more rigorously defined than at present, or it should be abolished. It has occurred to us to see many mistakes made from the too vague use of this term, which is frequently a most important one in medico-legal cases. In courts of law it is possible that the lawyer and the medical witness may differ as to the interpretation which they put upon these two words. The lawyer regards the 'general paralysis of the insane' as necessarily incurable, and as necessarily implying death at a period of not more than two or three years from the origin of the disease. By using this term, then—unless the medical witness otherwise and rigorously define the sense in which he employs the word, he will be held to commit himself to this view of the prognosis—a view which his evidence may variously contradict."

"Many of the ordinary physical diseases of the sane become most insidious and exceptional in the insane; their character appears to be masked or obscured by an inertia or torpor of the nervous system. Their frequently typhoid type is another feature worthy of note; while a third is the frequent absence of irritative or symptomatic fever. We have sometimes known no complaints made, have seen no external evidence of pain or suffering in acute phthisis—'galloping consumption'—where the subsequent necropsy proved the lungs to have been riddled with vomicæ, full of pus; in phlegmonous erysipelas, going on to the formation of enormous collections of pus in the limbs; in pneumonia, where the lungs were solidified and normal respiration was impossible; in organic diseases of the heart; in gastritis and other diseases."

"Frequently cerebral disease would appear to be vicarious, or, in other words, it takes the place of, and alternates with, diseases in other parts of the body. This phenomenon has been chiefly noticed in connexion with phthisis. The latter is one of the most common complications of insanity. It often happens where insanity and phthisis, or—perhaps we may be allowed to say, assuming, for the sake of illustration, the pathology of the cerebral disease—tubercular or scrofulous disease of the brain and lungs, coexist in an individual, when disease in the one organ is prominent, that of the other is in abeyance. That is to say, where and when the phthisis becomes acutely developed, the patient becomes *pro tem.* sane; and, on the other hand, when the pulmonary disease is overcome or re-

trogrades, insanity again appears, frequently in the form of a paroxysm of acute mania. *Apropos* of phthisis, we may further state that the scrofulous diathesis frequently manifests itself differently in different members of a family. One may be a lad of precocious talents, giving promise of the highest future distinction, but withal of an extremely sensitive nature, and possessed of a delicate nervous or nervo-sanguine temperament; a second may be of a very lymphatic temperament, and suffer from scrofulous sores of the glands of the neck; a third may die young of phthisis; a fourth may be insane; and a fifth, a drunkard or a prodigal."

"It is very certain, though it does not admit of definite statistical proof, that dyspepsia, that protean and heterogenous group of gastric maladies, is frequently the precursor, if not the cause, of insanity; interfering, as it does, more or less directly, with the due nutrition of the brain."

"1. That the size of the skull in the insane (excluding the class of idiots) does not materially differ from its size in the sane.

"2. That no relation can be traced, in the generality of cases, between the size or form of the skull and the different types or phases of insanity.

"3. That, though peculiarities of conformation of the skull certainly frequently exist, they do not bear any fixed relation to the types or phases of insanity.

"4. That similar conformational peculiarities are probably equally common, or nearly so, in the sane.

"5. That in a large proportion of cases the cranial development is decidedly good, and the conformation of the head apparently normal and regular.

"6. That the size and form of the head are therefore *per se* fallacious criteria in the differential diagnosis of insanity."

"The etiology of insanity is a subject of great importance as bearing on its proper prevention and cure. Important lessons may be learned in the daily history of every asylum. The sections pertaining to *causes* in the Tables appended to this Report are comparatively valueless—as all such Tables necessarily are—from the imperfect and unsatisfactory data on which they are founded; it were profitless, therefore, minutely to analyse them. But there are causes undoubtedly operating daily on the large scale—causes which society may do much to prevent or annul—and some of which, in ignorance, prejudice, or obstinacy, it does not exert itself to prevent or abolish; and to these we deem it not unworthy nor unnecessary briefly to direct attention. For we regard it as a duty—though, withal, frequently a disagreeable and thankless one—incumbent on the superintendents of asylums to point out to society the grand public lessons which the histories of such institutions teach. It is only one part of the duty and privilege of these officers—one part of the use of such institutions—to cure insanity. Not a less important duty or use is that of contributing, in however small a degree, to the prevention of insanity—to the purging from out so-

ciety of the unhealthy or morbid elements which predispose thereto. No year passes without abundant proof of the hereditary nature, or hereditary transmissibility, of insanity. Of 69 admissions, hereditary predisposition was proved in 17, 13 females and 4 males—the female sex, therefore, largely predominating in the proportion of more than 3 to 1. In one of these cases the mother was insane; in 2, the father; in 1, the father and brother; in 2, a brother; in 6, sisters; in 1, the maternal uncle; in 1, the paternal uncle; in 1, a half-uncle and aunt; in 1, a grandfather's cousin; and in 1, the family generally were eccentric or insane, according to the views taken as to what constitutes insanity and eccentricity respectively."

"Intimately connected with this subject is the delicate and painful one of the intermarriage of tainted persons, especially of tainted females—of women labouring under, or predisposed to, insanity—and whose offspring are more than likely to manifest insanity, or at least to bear about with them a strong predisposition. We cannot too strongly reprehend the practice in parents or friends, of wilfully concealing from an intending husband or wife the fact of existing or prior insanity in the opposite contracting party. Such practice is not only cruel, but criminal; it is perpetuating and propagating insanity broad-cast; it is burdening the country with the helpless and diseased; it is—to use a phrase which, if plain and homely, nevertheless embodies a great and wholesome truth—'deteriorating the stock' of society. One lamentable instance came under our notice during the year. A woman was brought here for the second time, whose house, on the evening preceding her admission, had presented the following scene:—In one apartment lay a dying husband, cursing, with his last breath, the day he had been married, and lamenting bitterly that he had not been made aware that he was allying himself with a tainted woman. His simple and pathetic story was this: in his youth he had had an attachment for her as a girl; he spent some years abroad as a soldier; on his return, finding her still unmarried, he renewed his former attachment, and was permitted to propose marriage without being made aware, either by her or her friends, that, during his absence, she had had one or more attacks of insanity. They were married, and subsequent attacks soon opened his eyes to his wife's morbid tendency: from that day to the period of his death he never ceased to allude to his alliance as the curse of his life. In an adjoining apartment, a son—an indolent 'ne'er-do-weel,' who had never exerted himself for his own support or that of his parents—had just committed suicide, on being told that, in consequence of his father's approaching death, he would be compelled to work. A daughter had just come home to this scene of misery to be confined of an illegitimate child; while the mother was rushing from room to room, raving mad, and unable to comprehend the scene in which she was so prominent an actor. But, strange to say, similar marriages are sometimes deliberately solemnized among the educated and higher classes of society, when both parties have their eyes open. Such *mésalliances* are, however, much less

seldom marriages of love than of convenience: there is probably, in general, money to be got on one or other side. The parties entering into such compacts are inexcusable on the plea of ignorance of the fearful results of such mal-assorted and unnatural unions. It is a delicate and difficult thing to interfere with civil liberty; but it admits of a reasonable degree of doubt whether there should not be some legal restriction in regard to such marriages. Their effects are most disastrous to society at large; and surely society, which bears the burthen and suffers the penalty, has a right to enter some species of practical protest against proceedings, which are contrary to physiological, as well as to moral, law. The propagation of insanity by means of fatuous and facile female paupers is now amenable to civil law. This subject we may safely leave in the hands of the new Lunacy Board. Such females are comparatively seldom married: their lives are too frequently of the most irregular and dissolute character. More than one deplorable instance has occurred to our notice during the year.

"We are naturally led from the subject of marriages among the insane to consider celibacy as a predisposing cause of insanity. Of 69 admissions during the past year, 49 patients have been unmarried, 17 married, and 3 widowed; or, in other words, the single have been considerably more than double the number of the married. But as the statistics of a single year may exhibit somewhat unusual or fallacious results, we have examined our statistics, bearing on this subject, for the last 31 years; and we find, as the result, that of a total of 679 cases, in which the social condition has been specially noted, 445 have been single, 196 married, and 38 widowed: that is, the single have constituted 65·54 per cent., and the married and widowed together 34·46 per cent., of the whole admissions; or, in other words, the former have been nearly twice as numerous as the latter. It is but fair to state that the statistics of a single asylum may be as fallacious—in relation to society at large—as those of a single year in any given asylum. The statistics of other asylums do show different results. Those who are sceptical as to the value of statistics go the length of asserting that they may be made to prove anything! We trust society has a right to expect that this and similar inquiries and subjects will be elaborated by the new Lunacy Board for Scotland, one of whose most useful duties we take to be the drawing up of statistics from the returns which Government compels the officers of asylums to furnish. Such is the public interest attachable to celibacy as a predisposing cause of insanity that we venture to compare our results with those arrived at by some of the first authorities—British and foreign—on the statistics of insanity, and to draw or deduce a few general conclusions therefrom. The statistics of Bethlem Hospital for the insane, London, according to Dr. Hood, show that the married are more numerous than the single patients in the proportiou of 1364 to 1194. This, however, is certainly an exceptional state of matters. Opposite results are given in Bucknill and Tuke's 'Manual of Psychological Medicine,' and

in the statistics of the majority of the British and foreign asylums. In the Salpêtrière and Bicêtre during 20 years ending in 1822, according to M. Desportes, of 2490 patients, 1472 were single, and 956 married, widowed, or divorced. Jacobi's statistics of insanity in Germany show that, of 2015 patients, 1573 were single, and 422 married or widowod. Statistics then, on the whole, indubitably prove that celibacy predisposes to insanity, and also the converse—that matrimony is, to a certain extent, an antidote against insanity, or exercises a preservative influence."

We are unable to devote more room or attention in this Review to the Perth Asylum than to state, that the patients treated in it for the year were, in the aggregate, 224 (115 males, 109 females,—here again the males are in excess, contrary to what usually prevails); that those discharged, recovered and improved, were 17 males and 14 females; ditto, "unimproved," 3 males and 1 female. The deaths were, 11 males (a large ratio as compared with the females) and 3 females, and the causes are thus stated:—Apoplexy, 3 (males); phthisis, 3 (2 males, 1 female); diarrhœa, erysipelas, exhaustion, hepatitis, cancer of liver, heart disease, and gastritis, each 1, (6 males and 1 female). Remaining under treatment at close of year (June, 1858), 175 (84 males, 91 females,—here the females have the preponderance). Appended to the Report is one from the chaplain, which is marked with more common sense and professional disinterestedness than we usually find in such productions, but which, for our own part, we conceive is entirely out of place in these Reports, equally so as those of the Commissioners in Lunacy and Inspectors, to say nothing of matrons, which should be for the board-room alone.

14. We have read with much satisfaction Dr. Wingett's valuable Report of the Dundee Asylum, of which he has been for a series of years the chief officer and Resident Physician, and whose management of the establishment, in all its details, continues to uphold for it the high character it has ever maintained amongst kindred institutions in Scotland. His immediate predecessor was Dr. Alexander Mackintosh, the present able and skilful physician of the Glasgow Asylum, during whose incumbency at Dundee that establishment prospered so happily and increasingly, that a larger and more responsible sphere of usefulness, as at his new seat of government, was deservedly his reward. The Dundee Asylum, like all the other chartered or public asylums of Scotland, is not confined to pauper patients exclusively, but provides accommodation also for the wealthy and educated classes, in an entirely distinct

establishment, however, on the premises, in which all the comforts and luxuries of refined life are provided on the most liberal scale, as we ourselves have had opportunities of witnessing. This is a system which has been in operation in Scotland for a lengthened period,—the mixed asylum system,—and has worked in a manner that cannot be denied as being fraught with the best and most successful results, and appear to us well worthy of extension, and of public support and confidence throughout the United Kingdom. Dr. Wingett has some sensible and judicious remarks in his Report on this subject, which being one that, at the present time, is attracting a large share of general attention, we think deserving of reproducing here *in extenso:*—

"The opinion prevails in some quarters, that the residence of patients of the upper and lower classes in the same asylum is objectionable, and that separate establishments should be provided for their accommodation. This opinion is grounded upon the supposition, that the rich and refined must experience a certain degree of repugnance at the idea of the propinquity of their lowly and less favoured fellows. The experience of this institution has afforded abundant and ever-present evidence of the groundlessness of this notion. No such feelings are ever manifested by the upper classes. They uniformly regard such incorporation of different ranks of individuals in precisely the same spirit with which they have been accustomed to regard it in the community which they have left. They perceive the same classes of society within as there are without. The distinctions of rank are, however, preserved; separation, as regards residence, is effected; and the pursuits and privileges of all have their appropriate limits assigned to them. No association or mingling takes place other than that which is desired by each individual, or which may be prompted by the ordinary motives which bring the rich and poor into contact in every-day life. Benevolence and sympathy bring about a certain amount of voluntary communication among the different grades, highly conducive to the health and happiness of all. It is matter of certainty that this juxtaposition of classes has a great deal of influence in augmenting the general prosperity. It is of daily occurrence that a variety of patronage is exercised by the rich to the advantage of the poor. Here, as elsewhere, rank adopts its pensioners and protegees; cast-off dresses and remainders of dainties are given away; and the diffusion of these little benefits among the poor affords both occupation and gratification to the donors. In fact, the establishment is regarded by all in the light of a small parish. One church unites all grades of worshippers; and a common affection tends to inspire a feeling of condescension and friendly attachment, rather than impatience on account of the poor being tolerated as neighbours. Judging from the experience of this institution, it is certain that the upper-class insane would repudiate this feeling which has been attributed to them, and regard the iso-

lation of their poorer fellows with deep regret. This juxtaposition of classes has always been a pleasant feature in the constitution of this Asylum, and fruitful in means of promoting harmony and contentment. The poorer classes are, however, the greatest gainers by this arrangement, seeing that they are thus the recipients of courtesies and kindness, having nothing but gratitude and respect to give in return. I have long been convinced that this is the best and most effective plan upon which a public asylum can be organized; and in the prospect of extended accommodation for the insane of Scotland, I sincerely trust that the benefits realized by this institution, with its admirable system of incorporation of classes, will not be lost sight of, out of preference for any cold and inexperienced proposals to improve upon existing arrangements, by separating patients into distant and unsympathizing groups of rich and poor."

The number of patients treated during the year in this establishment amounted to 259; 145 being males, and 114 females—another exception it may, in passing, be remarked, to the rule of the men exceeding the women in number.

The discharges, &c., of the above, were as follows:—

	M.	F.	T.
Discharged, cured,	11	10	21
Do., improved,	0	1	1
Do., by desire,	1	4	5
Died,	11	3	14
	23	18	41
Remaining,	122	96	218
	145	114	259
Daily average number of patients,	122	96	218

The assigned causes of disease of the patients admitted during the year were:—

	M.	F.	T.
Disappointment,	6	2	8
Fever,	0	1	1
Epilepsy,	0	1	1
Drunkenness,	3	0	3
Injuries of the head,	3	1	4
Unknown,	16	16	32

The forms of disease were:—

	M.	F.	T.
Mania,	6	3	9
Dementia,	12	9	21
Monomania and Melancholia,	8	9	17
Idiocy,	2	0	2
	28	21	49

The causes of death were:—General paralysis, 5 (males); marasmus, 2 (1 male, 1 female); phthisis, 3 (2 males, 1 female); bronchitis, disease of heart, gastritis, and cancer, each 1 (3 males, 1 female).

The year's expense are fully given, and amounted to £4585 0*s.* 5*d.* No tobacco appears to be permitted to defile the establishment, which is another good feature in its superior management.

15. The authorities of the Aberdeen Asylum having changed the ending of the year of its Medical Report, from March, as it had been, to December, in order to conform to the regulations of the new Lunacy Act for Scotland, the Report last issued, and now before us, embraces but a period of nine months. The results for that time were as follows:—

	M.	F.	T.
Patients in Asylum, April 1, 1857,	144	148	292
Admitted during the year, . . .	35	49	84
Under care and treatment during the year, ...	179	197	376

Removed during the year:—

	M.	F.	T.	M.	F.	T.
Recovered, . .	24	26	50			
Improved, . .	3	0	3			
Unimproved, .	5	3	8			
Dead, ...	5	16	21			
	—	—	—	37	45	82
Remaining in Asylum, Dec. 1, 1857,				142	152	294

Social Condition of Patients admitted.

	M.	F.	T.
Single, ...	20	28	48
Married, ...	15	12	27
Widowed, ...	0	9	9
	35	49	84

Form of Insanity in Cases admitted.

	M.	F.	T.
Amentia, ...	1	1	2
Mania, ...	11	19	31
Dementia, ...	11	10	21
Melancholia, ...	7	12	19
Monomania, ...	5	7	12
	35	49	84

Employment.

	M.	F.	T.
Gardening,	42	0	42
Workshops,	10	0	10
Needlework,	0	39	39
Knitting,	0	9	9
Laundry-work,	0	20	20
Domestic-work,	6	32	38

The year's expenditure embraced the following items, amongst which it will be seen that tobacco does not form one; but, on the other hand, washing is charged at £57 13*s.* 5*d.*, which surprises us (seeing that 20 females are engaged in the laundry); unless that the amount under that head means washing materials, as we presume it must:—

	£	*s.*	*d.*
Provisions,	2794	6	5
Fire and light,	370	12	11
Washing,	57	13	5
Medicines,	38	10	8
Wine, spirits, and porter,	73	17	8
Repairs,	413	0	2
Furniture and bedding,	236	12	0
Salaries to Medical Officers,	400	0	0
Do. to Chaplain,	50	0	0
Do. to Treasurer,	130	0	0
Do. to House Steward,	77	10	0
Do. to Matron,	70	0	0
Servants' wages,	568	7	10
Incidents, insurances, printing, stationery, and Annuity,	233	11	3
Interest,	339	17	0
Clothing for pauper patients,	279	10	0
	£6133	9	4

The causes assigned for the death casualties during the year were:—Exhaustion, 5 (3 males, 2 females); phthisis, 4 (1 male, 3 females); paralysis, 3 (two males, 1 female); disease of brain, 3 (females); ileus, 2 (1 male, 1 female); cancer, disease of heart, and jaundice, each, 1 (2 males, 1 female).

Dr. Jamieson, the very efficient head of the establishment, thus summarizes the proceedings for the period embraced in his practical Report:—

"The experience of the [nine] months now reported upon, I am glad to say, has been very favourable to the character of the house as hitherto upheld by medical results: the admissions have been 84,

the removals, 82; the gross number under care and treatment, 376; and the average resident number, 299. The recoveries have been equivalent to nearly 60 per cent. on the admissions, and the deaths to 25. The former is a very high average—the highest, indeed, that has been recorded in the history of the institution, with the exception of the year 1854; the latter, viz., the number of deaths, is, however, rather above the average. It is worthy of being noticed, that a number, equivalent to half of the patients admitted during a period embracing the last six years, has during that time left the hospital, recovered: a ratio very remarkable as occurring in an Asylum admitting all descriptions of insanity, even the most hopeless."

The following interesting extract, giving a short history of the creditable antecedents of the Aberdeen Asylum, is the only further one we can afford space for on the present occasion:—

"This Report, short as it is, and more than usually brief the period to which it alludes, may yet seem to have a special interest connected with it, as summing up the results attained from a local provision made nearly sixty years ago, and since so efficiently developed and upheld for the accommodation, treatment, and relief of those afflicted with what is, in the feelings of most, the saddest of human ailments.

"At the time that Parliamentary enactment first compelled an adequate degree of attention to be paid to the welfare of the insane in Scotland, Aberdeen was found already possessed of a self-supporting Asylum, containing 300 inmates, cared for by the services of a staff of about 40 officials, attendants, and servants, of various descriptions, and consisting of extensive buildings, in large part new, and set down in about twenty-five acres of ground, gradually acquired; that it contained upwards of 200 of the pauper lunatics of the town and district, and nearly 100 other cases, many of them of indigent, but not parochial insane, accommodated through benevolent funds connected with the institution at a low rate; that the treatment pursued in it was in harmony with the most advanced views; that the accommodation afforded to pauper and necessitous cases was, on investigation, admitted to be comparable to, and in respect of combined comfort and economy before, any other in Scotland at the date; and that, by the previous existence of the Hospital, the Lunacy Board for the district found on its establishment that it had it in its power to save the county from heavy and unlooked-for assessment and taxation."

16. The Pennsylvania Hospital for the Insane Annual Report for the year 1857, by its Physician-Superintendent, Dr. Kirkbride, is, as usual, well drawn up, giving a full account of the year's proceedings, which have much interest and informa-

tion for those engaged in the treatment of the insane, as well as the general reader besides. The Report states, that the total number of patients in the hospital during the year was 364 (177 males, 187 females). Those discharged cured amounted to 74; and 43 were removed in different stages of improvement. The deaths numbered 17 (14 males, 3 females); 3 were the result of acute mania; 4, softening of the brain; 4, from gradual exhaustion induced by the combined action of long-continued mental excitement, want of sleep, and a refusal of food. There was one case of suicide, the particulars of which are not stated, but which we consider should always be given, as suppressing the facts in connexion with those unfortunate but unavoidable casualties in hospitals for the insane, or using any mysterious silence in connexion with them, is only calculated to produce an unfavourable effect, which, however, a contrary course of procedure would entirely prevent. The other causes of death were,—1 each of dysentery, congestion of the brain, diarrhœa, phthisis, and sloughing ulceration.

After making some sensible observations in reference to the due employment and amusement of the patients in an asylum, Dr. Kirkbride goes on to say, and with much truth:—

"An interest in having the patients pleasantly occupied—after a kind, courteous, and uniformly cheerful disposition in all intercourse with them, and for which no other qualifications can be a substitute—is, indeed, one of the most desirable traits in those who have the care of the insane."

No deficiency in this respect would appear to prevail in Dr. Kirkbride's Asylum, a great variety both of occupation and amusements being provided for them. During nine months of the year regular entertainments, or lectures, on three evenings in the week, are given. We conclude our notice of the Pennsylvania Asylum with the annexed extract, which is so entirely in accordance with our frequently expressed views on the subject to which it relates, that we would beg to recommend it to the serious consideration of all parties whom it may concern on this side of the Atlantic,—those parties whose aspirations are so strongly in favour of nothing short of a file of official chaplains representing the several religious denominations being, *nolens volens*, attached to our hospitals for the insane, which are nearly similarly circumstanced as to varieties of religion as the Pennsylvania establishment, and which should be similarly dealt with:—

Observance of the Sabbath.—Our proximity to a densely settled neighbourhood enables us to allow those patients for whom it is

believed to be desirable the privilege of attending such divine worship, on the first day of the week, morning and afternoon, as they had been accustomed to previous to their entering the hospital. In the evening the patients generally assemble in the large rooms in the centre building, where portions of the Holy Scriptures are read to them by the officers of the institution; and, in certain wards, reading of the same kind is regularly done by the teachers. As no visitors are admitted on this day, and all unnecessary labour is avoided, it has long been a subject of remark, that the quiet and repose about the whole establishment, which is then almost always to be observed, is very striking. This seems to be attributable to a deep-seated respect for the day, the effect often, no doubt, of early education, and which is not entirely lost even when disease has taken from the mind some of its highest attributes. On the Sabbath no leave of absence is granted but to attend divine worship, and throughout the grounds, in the shady groves and pleasant summer-houses, as well as in the wards, our inmates seem to appreciate the quiet and repose that rightfully belong to the day. This mode of observing the Sabbath was commenced, after mature reflection, at the opening of this institution, and extended observation of its effects; and a full knowledge of all that has been done elsewhere, convince me that for this hospital, and for the patients who are received here—embracing individuals of nearly every religious denomination, and often with strong attachments to their own views—it is the best that can be adopted."

17. The present Superintendent-Physician, Dr. John P. Gray, of the Asylum of the State of New York, has not favoured us with copies of his Reports with the same regularity as his able predecessor, Dr. Benedict. The last one we received was the tenth, and this is the fourteenth. As far as we ourselves are in question, this is a matter of no concern whatever; but if professional men, engaged in the practice of psychology, desire that their labours should be noticed in our Annual Review, they cannot expect that this entirely voluntary act will be done unless they transmit us their Reports, our invariable rule being to include none in our list but such as are duly transmitted to our editorial address. To judge from the handsomely executed engraving in the frontispiece of this Report, of the New York State Asylum, it must be a very imposing building of its kind. But its height is against it, exceeding even three storeys,—the three-storeyed asylums in England being objected to, and with good reason, by those who are best qualified to give an opinion on this important point of detail, two storeys being considered the proper elevation, both for sanitary purposes and for the better inspection of the establishment.

The number treated for the year in the institution was 697 (371 males, 326 females), the disposal of whom is thus stated:—

	M.	F.	T.
Discharged, recovered, ...	59	41	100
Do., improved, ...	20	13	33
Do., unimproved, ...	32	33	65
Not insane, ...	7	1	8
Died, ...	22	8	30
	140	96	236
Remaining under treatment, . .	231	230	461

It is observed by Dr. Gray, regarding those discharged "unimproved," that the removal proved beneficial, "in some instances being not only no burden or special care, but actually useful, and a source of comfort to their friends." Mention is made of a form of continued fever merging into a marked typhoid type, which prevailed to some extent, twenty-six cases occurring, which was found to arise from mephitic air, from numerous rat-holes opening directly beneath the windows of certain dormitories, and communicating with the main sewers. The cause being removed, the fever ceased, not, however, without proving fatal in three cases, one being a patient, and two employés. The other causes of death were:—Exhaustion from mental disease, 7 (6 males, 1 female); general paralysis, 6 (males); phthisis, 5 (3 males, 2 females); epilepsy, 2 (males); malaria cachexia, 2 (males); suicide, 2 (1 male, 1 female); nephritis, 1 (male); fibrinous concretion of heart, 1 (male); ovarian dropsy, 1 (female); gangrene of lungs, 1 (female); old age, 1 (female). Total deaths, 30. We have the same observation to make here as when analyzing the Pennsylvania Report, namely, that of the suicides, which unhappily were 2, being passed over in studied silence, or merely given in the mortality list as ordinary cases of death, which we must demur to, and strongly advise our Transatlantic brethren to be a little more explicit in the event of so much to be deprecated an occurrence again taking place in their admittedly well managed institutions. We consider that this departure from the rule invariably pursued in our hospitals for the insane at home, under similar circumstances—that of affording the fullest information of so unfortunate, but, as we have already mentioned, so unavoidable an event, be the means what they may to prevent it—is doing a great injustice to the Superintendents themselves, and placing them in a false position before their brethren. We hope these

suggestions, on a delicate and painful subject, will be taken in the same good and friendly spirit in which they are given.

18. Dr. Joseph Workman, the able and efficient Physician-Superintendent of the Provincial Hospital for the Insane at Toronto, Upper Canada, has favoured us with copies of his excellent Reports from July, 1853, to March, 1858, addressed to the Legislative Assembly of the Province of Canada. We are glad to find a countryman of our own, an Irishman, occupying so responsible and important a position in our British possessions in North America, and, judging from the official documents before us, and the great candour and no less spirit of independence, as well as professional zeal, in which they are written, we must conclude that the Toronto establishment has at its head a well chosen and most excellent Superintendent in the person of Dr. Workman. On the occasion of Dr. Workman taking charge of his Institution, in July, 1853, the number of inmates was 345, of whom 187 were males, and 158 were females. At that period the general health of the Asylum was far from being satisfactory, and our only surprise is, from what follows in the Report, that a plague had not broken out within its walls, and the patients committed to its pestilential agencies —certainly no care which implies due provision having been made for their health, treatment, and comfort—swept off wholesale from this side of the grave. On this extraordinary state of things Dr. Workman states:—

"Every apartment abounded with foul air, and it was found that beneath the basement floors, covering a space of 600 feet in length, by 30 to 100 feet in breadth, there had, from some undiscovered cause, accumulated a mass of filth and impure fluids, the stench from which, when first exposed, was so insufferable and overpowering as instantly to sicken several of those who, including the Visiting Commissioners, chanced to inhale it. The undersigned could not obtain from any available source of information, whether architect, builders, or operatives, who had been employed in the erection of the House, or officers and servants in the establishment, any adequate explanation of the existing evil. There could, however, be no doubt, as to the pestilent influences of the nuisance, and no physician having a due regard for the lives and health of his patients, or for his own reputation, could tolerate its continuance. In the eastern division of the house, beneath the kitchens and adjoining parts, the filth was found to measure from three to five feet in depth, and was of varying consistence, from that of dense mud to thin molasses. The superjacent floors and joists were so rotten as to yield under every passing foot, and in several places had given way, leaving openings from which issued the most offensive effluvia. A rank fungous

vegetation hung from the under surface of the decayed timbers. The dry rot had seized the wood skirtings, and other parts above, and extended into the upper storeys, where it is likely to continue its ravages. But, however pressing was felt the necessity for an exploration and cleansing of the foundations, it was deemed exceedingly hazardous to undertake the work during the summer or autumnal months. No greater evil could probably result from the continuance of the nuisance, in its present state, than from its exposure and agitation in the process of removal. This conclusion was amply verified, even in the cold weather of November, December, and January, when at length the accumulated filth was disturbed and carried to a proper distance outside. The health of the inmates, as well the lunatic patients as the officers and servants of the Institution, was much affected, and continued so until the whole work of cleansing, repairing, and altering the basement was completed. The cause of the bad state of the foundation was discovered to have been a defect in the deep drainage, of a most unaccountable character. The interior drains from the kitchens, laundries, and other parts, being followed from their sources to the points of emergence from the building, were here found to be further impenetrable, having never been carried out to the main sewer, which was at the short distance of 22 feet. The remedy for this evil was palpable, and was promptly applied."

Again we find, that, lethal as the surrounding atmosphere was in this devoted institution, one under the immediate direction and control of the Provincial Parliament, the water was nearly as potent in doing the work of havoc to the lives of her Majesty's mentally afflicted subjects at Toronto, as the following extract will show:—"The water supplied to the Asylum by the forcing-pumps on the bay shore is not less impure than the air of the rooms. It is drawn from the lake at the distance of only sixty yards from the mouth of the main sewer, which carries off all the filth of the privies, laundries, and sinks of the establishment." The means of classification are stated "to be so defective in arrangement as to render the institution comparatively inefficient as a curative establishment;" and, as if all these evils were not sufficient to try the temper of the most patient physician in the world, another Protean head is reared through the "introduction of criminal lunatics from the Provincial Penitentiary and the county jails." It is an outrage against public benevolence and an indignity to human affliction, as Dr. Workman properly observes, "to cast into the same house of refuge with the harmless, feeble, kind-hearted, and truthful victims of ordinary insanity, those moral monsters which nature sometimes seems to have formed, for the purpose of teaching us the inestimable value of the constitution with

which the species has been blessed; or, yet worse, those villains who affect insanity as a means of evading the just punishment of the most atrocious crimes." In a subsequent Report (1856) Dr. Workman is enabled to mention the removal of the male criminal lunatics from the Asylum "as a blessing to the institution, the true value of which could be appreciated only by those who were cognizant of the extent of the evil caused by their presence." This we can well understand, for we have had experience of a similar grievance, and the inestimable advantage and comfort which resulted from a *total separation* of such inmates from the ordinary patients, which has been effected in Ireland by the establishment of the Central Asylum at Dundrum, by Act of Parliament in 1845, and now being carried into operation in England also, after a long struggle to accomplish the same desirable separation. In his Report for 1857, Dr. Workman is enabled to state the gratifying improvment which had taken place in the general health of the Asylum as follows:—

"On my assumption of the duties of Medical Superintendent, dysentery was, and I believe long had been, a very formidable endemic of the Asylum. Erisypelas had been a regular and very perplexing winter visitant. An indigenous cholera, not less malignant and fatal than that of India, had found, in the substratum of filth by which the whole foundation was underlaid, a genial soil. Were proof at this day wanted of the fact, that cleanliness is the surest safeguard against pestilence, it might be had in a comparison of the present and the former state of the basement and other parts of this house. Since the general cleansing of the establishment, and the completion of the drainage, not a single case of fatal dysentery has occurred, and very few cases, even of the mildest form, have been observed. Erysipelas has entirely disappeared, and under the blessing of Providence, in the last visitation of Asiatic cholera in this city, the Asylum entirely escaped this dreadful scourge."

After referring to the deaths in ordinary which occurred in the house, the same not being ascribable to any morbific agency peculiar to it or the locality, but rather the result of pre-existing and frequently long-continued formidable organic disease, as was found by post-mortem examinations, which he had been in the habit of conducting in nearly every case of death (the interesting particulars of a large number of which are embodied in the Report), and stating his belief that insanity is never associated with perfect bodily health, and in the majority of cases dependent on physical debility,—a belief in which we entirely concur,—Dr. Workman goes on to say:—

"It is very much to be desired, with reference to the latter fact, that the true character of the malady, and its most appropriate treatment, were better understood by the medical profession at large, but especially those of the more remote country settlements. Many patients come to this Asylum in a very reduced state, and not a few have been placed beyond the reach of curative means in consequence of the active and depressing therapeutic measures which have been adopted by their physicians. Blood-letting, purging, vomiting, salivation, blistering, cupping, setons, low diet, and the whole battery of medical destructives, have been exhausted; and it is fortunate if the patient has fallen into the hands of only one of this class of psychologists. The most promising cases are generally those for which least has been done. Were generous diet, well-directed kindness, exemption from bodily restraints, moderate exercise, and in many cases a judicious allowance of wine or alcoholic beverages, substituted for the present erroneous medical treatment, a very large proportion of those who are now sent to this Asylum would recover at home, and many who are rendered incurable for life might be saved from so melancholy a doom.

"In expressing this opinion, I am well aware that I am sustained by the unanimous voice of the entire body of medical superintendents of lunatic asylums, both in America and Europe: scarcely a Report from any institution for the cure of insanity reaches me in which the subject of inappropriate treatment before admission is not alluded to, and the evil result deplored."

We have only to say that we believe the caution contained in the above, as to the serious consequences resulting in the use of depressing agencies in the treatment of insanity outside the walls of an hospital for the insane, is most just, and should be duly attended to by all practitioners at home as well as abroad.

Having gone so much at length into Dr. Workman's first Report, embracing a period of four years, we have left ourselves room for little more than a mere glance at his more lately issued one—namely, that for the year ending 1st March, 1858, at which period the number of patients remaining in the house was 466 (215 males, 251 females); and the total treated during the year, 594; the new patients admitted for that period being 166. The year's discharges were 89, and the deaths, 34. Of the patients who remained under treatment, 397 were in the Chief Asylum, and 69 in the University Branch Asylum, an auxiliary establishment provided as additional accommodation for chronic and harmless patients, chiefly females, which had succeeded so admirably that another adjunct of the same kind was strongly recommended. This Report forcibly calls attention to the great want of asylum accommodation for the

wealthier and more respectable insane, their friends being necessitated to sue for admission for them "at the portals of the public institutions of their republican neighbours, praying for that decent and comfortable accommodation which their own wealth had not provided, or the semi-barbarism of their own land had yet denied."

Dr. Workman would appear to have had his share of trouble with the subordinates of his large Asylum also, being nothing better off in this respect than his brethren in the mother country. On this subject we subjoin the following extract, with which we must take leave of his very spirited and ably written Reports :—

"But the superintendent of an insane asylum has other people to manage and to govern besides his patients. Numerous servants and attendants, under whose charge the insane are placed, demand his vigilant, keen, and incessant supervision. The amount of mischief which even one scoundrel is capable of working in any large establishment, and the annoyance and perplexity such a character can contrive to give, can be understood only by those who have encountered the evil. The Toronto Asylum has not enjoyed total exemption from troubles of this sort. I have, however, fearlessly and without favour exercised, as I purpose for the future to exercise, towards all under my control, that authority which the law has vested in me as Medical Superintendent of this Asylum, and without which all salutary discipline would be but a delusion. No man of sense in a position of heavy responsibility will dismiss a good servant; none but fool or a knave will retain a bad one. No evil which can redound from the dismissal of a bad servant in a public institution, no slander which he may whisper or publish, can possibly be so dangerous as his retention. Such persons seldom fail to paint in dark colours the character of their late masters ; and there is always to be met with in society a considerable number of people who feel a deep interest in their neighbours' faults, and find much comfort in making them largely known. An officer of this institution, not overloaded with other work, has been in the habit of inquiring from servants leaving the establishment what have been the reasons for their departure ? It would be very interesting and instructive to have a perusal of this gentleman's notes."

19. It has been our pleasant duty, on more than one former occasion, to pass in review the pages of the Psychological Journal, which, under the able management of its distinguished editor, Dr. Forbes Winslow, has won for itself no mean place in the scientific journalism of the day. We have now before us four of its quarterly issues, and while we find therein much to commend, and which is calculated to maintain its high po-

sition, we must, in critical candour, add, that some portion of their contents appears to us by no means "up to the mark" of former excellence, nor even calculated to promote the interests of that department of scientific knowledge with which the Psychological Journal has been so long identified.

The January Number opens with a paper, "Body *v.* Mind," which is every way worthy of the periodical, and of the important subject handled. If we err not, after a careful perusal of its contents, we would ascribe it to the accomplished pen of the editor himself. But, whoever is its author, it contains a valuable contribution to a subject until of late quite too much neglected, namely, the relative importance and mutual bearing of matter on mind, considered with a special reference to the human organization. The writer pleads, and pleads well, for due attention to *both* these constituents of our nature, and sums up a long and interesting investigation into the causes and consequences of neglected physical health, in *resumè* of his facts and arguments, which we cannot refrain from quoting somewhat at length:—

"There are certain practical deductions obviously to be drawn from the details and arguments that have been brought forward.

"1. Devotion to intellectual pursuits and to studies, even of the most severe and unremitting character, is not incompatible with extreme longevity, terminated by a serene and unclouded sunset. When Fontenelle's brilliant career terminated, and he was asked if he felt pain, he replied, 'I only feel a difficulty of existing.'

"2. Mental application is a powerful remedy in diseases both of body and mind; and its power as a remedy is proportionate to its intensity as a pursuit.

"3. The emotions, especially those of a depressing kind, as anxiety, fear, &c., have a remarkable influence in giving a tone to, and intensifying the morbific effects of, excessive mental labour. Yet in some cases, as in those of Byron and Cowper, the best and only resource against despair is found in composition.

"4. The turmoils of active life do not appear to render intellectual labour more injurious to the system; possibly here also the influence may be counteracting. Milton, the Secretary to the Commonwealth, in times when men lived years in months—blind and in domestic discomfort, writing his immortal poems; John Wesley, persecuted and almost an outcast from his former friends—in 'labours more abundant'—denying himself natural rest and refreshment, yet acting with mind and body with unparalleled energy; Voltaire, the apostle of infidelity, at war with more than the whole world; Luther, hunted by principalities and powers like a wild beast—these and a cloud of others warred with the existing order of things, and remained masters of themselves and their mental powers to a ripe old age.

"5. The injurious effects of mental labour are in great measure owing—

"To excessive forcing in early youth;

"To sudden or misdirected study;

"To the co-operation of depressing emotions or passions;

"To the neglect of the ordinary rules of hygiene;

"To the neglect of the hints of the body; or

"To the presence of the seeds of disease, degeneration, and decay in the system.

"6. The man of healthy phlegmatic or choleric temperament is less likely to be injured by application than one of the sanguine or melancholic type; yet these latter, with allowance for the original constitution, may be capable of vast efforts.

"7. The extended and deep culture of the mind exerts a directly conservative influence upon the body.

"Fellow-labourer! one word to you before we conclude. Fear not to do manfully the work for which your gifts qualify you; but do it as one who must give an account both of soul and body. Work, and work hard, whilst it is day; but the night cometh soon enough —do not hasten it. Use your faculties, use them to the utmost, but do not abuse them—make not the mortal do the work of the immortal. The body has its claims,—it is a good servant; treat it well, and it will do your work; it knows its own business; do not attempt to teach or to force it; attend to its wants and requirements, listen kindly and patiently to its hints, occasionally forestall its necessities by a little indulgence, and your consideration will be repaid with interest. But task it, and pine it, and suffocate it, make it a slave instead of a servant; it may not complain much, but, like the weary camel in the desert, it will lay it down and die."

We have, in the same Number, some interesting details and statistics respecting the treatment of the insane on the Continent of Europe, and especially in the asylums of Italy, Germany, and France. These will be read with interest, and we think also with profit, by many in this country engaged in the same arduous and honourable field of medical practice. Some of the habits, in the treatment of Continental patients, might, we think, be transferred with profit to our own asylums.

These, and other articles in the January Number of the Journal, are both in keeping with its subject matter, and creditably compiled and composed. But we must be permitted to express our doubts as to the admissibility into the pages of the Psychological Journal, on the score of suitability, of such a paper as that which here meets us, headed "The Indian Rebellion in its Moral and Psychological Aspects." That rebellion may, undoubtedly, have such aspects, but if it have, we altogether miss them here. This Essay might form a very proper article, or rather some half-dozen such, in the way of leader in

the "Times," or a chapter in some historical essay on the Indian revolt, but we must demur to its appearance in the Journal before us; the more especially as the latter half of its title and implied promise are almost entirely forgotten or omitted.

Nearly the same observations apply to the rather elaborate article on "Civilization," with which the April Number opens. We cannot but look upon such papers as these as very much like "filling stuff," and would prefer to see the pages of this hitherto admirable periodical more strictly confined to what is its legitimate *materiel*. The article on the "Psychology of Kant," with which the July number concludes, is an able digest, carefully and philosophically written, of the mental science of the great German metaphysician of the last century. And yet we must honestly say, that its place would appear to us more germane to the pages of the Transactions of some of our Universities or Philosophical Societies, than where it is now found. This paper is, however, both more appropriate, and vastly more in the true spirit of a Psychological Journal, than those which we have noticed, and others which might have been specified.

We perceive that *intemperance*, both as a predisposing cause, and in many cases as a form of *bonâ fide* insanity, comes in for a due share of attention in these Numbers of the Journal before us. But, while so saying, we must also add, that such a production as No. VI., in the January Part, seems to us very far indeed below the standard, either in matter or style, of a scientific periodical. It might pass muster among a bundle of "temperance tracts;" but how it came, in its present form, from under the editorial censorship of Dr. F. Winslow, is really more than we can, "as at present advised," say. We have here an *amalgam* of most thorough truisms, some (as to us appears) very irrelevant, and, as it would seem, random selected cases, with an attempt at pathological and psychological comment, conveyed in language not always scientifically, not to say grammatically, correct. As a fair specimen of the writer's style and manner of handling his subject, we extract the closing paragraph of his Essay, and shall add no comment:—

"Among the immediate advantages which would result, might be calculated a great diminution of crime; and amongst the working classes they would, with habits of sobriety, manifest greater prudence and forethought; and thus, with a sense of self-respect, would be found a great decrease of pauperism and its consequent degradation. And those amongst the wealthy, when they are cured of an insatiable habit, they would be more likely to attend to works of utility, and may thus become benefactors of their less fortunate fellow-subjects, instead of perverting their morals by their previous most debasing

example. Thus we may affirm, that the good which would result from forcibly counteracting the inordinate craving tendency of chronic intemperance would be greater than the most sanguine spirits, in the full activity of their benevolence, could ever have anticipated.

"And, therefore, as it is our firm conviction that mere precepts, however good, will not correct the errors and crimes resulting from drunkenness, then, in the name of religion, morality, patriotism, and humanity, there is demanded some forcible and effective means to render certain this essential and all-important reform in the habits of a vast proportion of the community."

Somewhat similar in style to the foregoing is an "Autobiographical Sketch of a Drunkard," forming No. V. of the Journal for July. We cannot but consider it a most unfortunate circumstance, for the credit of our contemporary, that such a paper has found its way into it. How *could* the respected editor have admitted it? Has he ever read it? The *moral* of the tract (for it is another attempt at a "temperance tract") is exceedingly questionable. It is the experience of an unhappy man, who, struggling against strong conscientious convictions, and as we think exceedingly ill-advised, took the total abstinence pledge again and again, only to break it. He was evidently in a sober and serious mood when he wrote this autobiographical sketch, but how long he was likely so to continue, or whether he even now remains in it, are matters of exceedingly difficult solution from the data which his own recorded experience affords. But our principal objection to the appearance of such an article in the pages of the Psychological Journal is founded on the fact of its containing sentiments which go very far indeed to upset, or at least to unsettle, in weak-minded persons, some principles and practices which lie very near the foundation of our common faith. How could the editor possibly give admission into his Journal of this teetotaller's hallucinations on the subject of the Christian Sacrament of the Lord's Supper, without one word of caution or refutation? We must earnestly advise a far more careful execution of the editor's office of revision at least, if not of exclusion, in the future management of this hitherto excellent Journal.

Our notice has already extended so far, that we have only space left to mention, with deserved commendation, the excellent Review of Dr. E. B. Legúard's "Researches on the Pathology and Physiology of the Nervous System," with which the July Number opens; the paper "On the Causes of Idiocy,"

which follows; and those on the criminal responsibility of the insane (No. X. in the Number for January, and No. II. in that for April). Those papers are all well worthy of an attentive perusal, and quite in keeping with the high character which the periodical has hitherto maintained.

The October Number of the Journal, which completes the eleventh volume, has just issued from the press; and although several of the articles furnished herein to the students in mental science, as well as those generally interested in kindred subjects, deserve a special notice, our limits prescribe to us but a slight and passing one. The *contents* of the present Number will show the line pursued by its accomplished editor; and in thus making a reference to Dr. Forbes Winslow, we cannot forbear the addition of a wish, that his mind and pen were more palpably manifest in this Journal generally, as well as in the portion of it now before us. Dr. Winslow has furnished one article at least, under the head of "Lunacy Legislation," forming the valedictory address delivered by him at the meeting of Medical Officers of Asylums for the Insane, held at Edinburgh in the month of July last. In this very valuable document, various existing evils, connected with the subject of insanity and *quasi* insanity, are pointed out, as well as some greatly called for, and very seasonable remedies, chiefly of a legal kind, suggested. We hope that this paper may come under the notice of some of our legislators, and especially those of them in that position, which calls upon and enables them to originate measures for many of the evils which so seriously affected society, arising from this acknowledged source.

We have also an interesting paper "On the Moral Pathology of London," but, respecting it, as well as the opening "Psychological Quarterly Retrospect," we confess to the opinion which we have been constrained to express regarding other such contributions to former Numbers of this periodical, that, instructive and suggestive as they may be, we can hardly endorse them as directly or sufficiently within the legitimate scope of the Journal wherein they appear. If it be destined to fill the important path in a medical and psychological sense which it has chosen for itself, its articles must bear more directly, and with a more strictly scientific aim, on the subject matter in hand.

There is a clever, as well as an amusing paper "On a Particular Class of Dreams induced by Food," and another "On the Psychological Basis of the Language of Orators, Poets, and Philosophers," which will repay a reading: in the latter we

notice that higher tone of psychological writing and thought, which (to borrow a phrase from our neighbours north of the Tweed) we *desiderate* in such a Journal.

The statistical information furnished in the remaining articles, which deal mainly with the Asylums on the Continent, as well as the present state of Lunacy in England and Wales, is exceedingly valuable, as we have no doubt it is authentic, and will be read with interest by all who are engaged in this most honourable and praiseworthy department of practical pathology.

20. The Asylum Journal of Mental Science, or, as in its last issue for the October quarter, it is more appropriately designated, "The Journal" simply "of Mental Science," an alteration suggested and agreed upon at the recent Annual Meeting of the Association of Medical Officers of Hospitals for the Insane, contains, in its several parts for the present year, much valuable matter in relation to Psychology in all its departments. The papers in the January Number are numerous and interesting, in addition to several good illustrations. One of the former is an extended and able review, by Dr. Bucknill, the Editor of the Journal, of the last Report of the Inspectors of Hospitals for the Insane in this country, which is characterized by the reviewer as "a full and most valuable Report, replete with useful and exact information, and with scientific interest," an approval of no mean kind, coming, as it does, from a hand well skilled in discerning good and evil in such production. The smallness of the salaries paid to the Inspectors is exposed for its invidiousness and great unfairness as compared with those paid to both the English and Scotch Commissioners, who have not nearly so much actual work to do, or responsibility imposed upon them. "They," observes the writer, "at present receive only £900 per annum, a sum by no means adequate to their position and the work they have to do, and invidiously small as compared with the salaries of Commissioners in other parts of the kingdom." We have expressed pretty similar views ourselves in our last Annual Review[a] on this point, and are now very glad to find that we are supported by our excellent and disinterested contemporary, and, with him, seriously hope that our Inspectors "may receive, under any future enactments, a more just remuneration than that now appointed them." Another excellent and well-timed article in this Number is one entitled "Admission of Reporters to the Board Meetings of Asy-

[a] See vol. xxiv., No. 48, p. 348.

lums," which has more especial reference to the Cork Asylum, and incidentally to that at Mullingar, in which institutions the extraordinary, unprecedented (except in the above-named two Asylums), and unfeeling practice has been established, of regularly parading in the local newspapers the sayings and doings of certain empty-headed and vain Governors, panting after newspaper notoriety, even through the unfortunate insane under their protection. The writer of this paper, after going pretty largely into the matters of a newspaper report of the trumpery proceedings of a Board Meeting of the Cork Asylum, and after a good deal of cutting sarcasm, goes on to say:—

"Certainly there is something bad pervading the establishment; namely, the influence of vain egotistical men as governors, whose proceedings appear but too well adapted to promote a general insubordination. By transforming their Board into a petty police court, they will doubtless succeed in driving from the Asylum all good servants. By denying to their superintendent all proper authority over such servants as he can procure, they will get plenty of complaints to investigate; and by publishing such investigations in the newspapers, they will find themselves at length served by such persons only as are indifferent to the public exposure of any venial lapsé of temper or conduct. Was it not enough to dismiss the insubordinate Mrs. Larkin for her act of disobedience? Was it not enough to fine and reprimand the impertinent Julia? but they must also be gibbeted to the whole country side, as examples of board-room justice. The officers and attendants at the Cork Asylum must be very thick-skinned. We trust that the patients possess the like quality, for the natural course of events will cause them to need it. After these complaints were disposed of, the jocose Mr. Dowden became quite eloquent on 'a complaint he had to make, they had no schoolmaster there,' &c.; 'they could get one for £20 a year;' 'there is no doubt we pay a wretched price for mind.' Alas, yes! one of the prizes we pay is to have places of business converted into oratorical platforms, and our time wasted in listening to *bunkum* speeches. Bunkum is the American term for those speeches in Congress which are *solely* intended for the *local* newspapers, and the gratification of the friends and constituents of the orator. Bunkum occupies a vast space of time at St. Stephen's, to the great hinderance of business; but if it invades successfully the board-room of asylums, gaols, unions, and other places, which ought to be centres of action alone, it will exalt throughout the country the unpractical wind-bag man, above the man of affairs, and prove about the worst thing that ever came from the west."

We have only further to remark on this subject, of admitting reporters into asylums, that we consider it to be the bounden duty of the Inspectors to call the attention of the Executive to

such an impropriety, in order to have the evil at once remedied.

The April Number has the following, amongst other papers—"Description of the new House at the Devon County Asylum, with remarks upon the sea-side residence for the insane," by the Editor; "The Practice of Surgery in connexion with the Treatment of Lunacy," by Mr. Tyerman, one of the Medical Superintendents of the Colney Hatch Asylum, a very practical and instructive communication; "On Mental Physiology, by Mr. Dunn, F.R.C.S. Eng.;" "The Insane Colony at Gheel," by Dr. Stevens, Physician-Superintendent of St. Luke's Hospital—a paper full of interest; "The Condition of the Insane, and the Treatment of Nervous Diseases in Turkey," by Dr. Foote, formerly the able Medical Superintendent of the notorious Norfolk County Asylum, where he was so tyrannically treated by its Visiting Justices;—this essay does him much credit; "The Custody of the Insane Poor," by the Editor, who has described this subject with much ability, but we must take exception to the term "custody," which sounds harsh and savours too much of the gaol. We find in the July Part of the Journal, several excellent and valuable articles, with full reports of the Commission of Lunacy on Sir Henry Meux, and the Rev. Mr. Leach, both of which have engaged so large a share of the public attention. Mr. Tyerman's paper is continued in this Number with equal interest as the first portion; and Dr. Huxley, the eminent Physician-Superintendent of the Kent County Asylum, has a notice of a form of window suited for asylums, which appears ingenious and well contrived for its special purpose. The last Number of the series for the year, the October issue, which has just come to hand as we were going to press, has for its opening paper one entitled, "Hamlet, a Psychological Study," from the prolific pen of the talented Editor, who discourses his subject with much eloquence, and at great length, namely, in 55 pages; next follows the official Report of the proceedings which took place at the recently held annual meeting of the Association of Medical Officers of Asylums and Hospitals for the Insane, in the University of Edinburgh, Dr. Conolly, D.C.L., filling the chair as President for the current year; Dr. Winslow, the retiring President, read a valedictory address, of much eloquence of style, as might be expected from him. Several papers of interest and importance, now published *in extenso* in the Journal, were read at the Meeting, and among them was one in particular supplied by Dr. Huxley, the very intelligent and generally esteemed Resident Physician of the Kent County Asy-

lum, "On the Existing Relation between the Lunacy Commission and Medical Superintendents of Public Asylums," in which he expresses his mind most independently and freely in regard to the conduct of the Commissioners in Lunacy towards the experienced and able men who are at the head of the public asylums in England; and from the tenor of which the only conclusion to be drawn is that, as matters at present exist between the Commissioners and the Superintendents, nothing short of a drawn battle is close at hand, nay, at the very doors,—a state of things greatly to be lamented, being much against the public interests, and very different to what happily exists, and has ever existed between the Government Inspectors in Ireland and the Medical Officers of the Public and Private Institutions for the Insane; courtesy upon the one hand, and esteem and respect on the other, being the order of the day with them in their different relations. That there are good grounds for the conclusion we have arrived at, the annexed extracts from Dr. Huxley's paper will make clearly manifest:—

"Let me review briefly a recent act of the Commission bearing on the moral and social relation between Superintendents and Commissioners. In the inquiry the Commissioners instituted by circular respecting the use of the shower-bath in asylums, an accident merely coinciding with the application of that apparatus set that inquiry in motion. If the apprehension was right, and demanded, on discovery, the extreme measure the Commissioners sought to institute, where was their knowledge of the practice of shower-bathing in asylums during many previous years? With what a sudden fire for the public weal were they not burned by the accident of a man whose heart was degenerated in structure being submitted to the shower-bath, and dying soon after! I have said, *the accident of a man with a degenerated heart*, which appears to have been the real accident, and a contingency, perhaps, not to have been foreseen; but I must not be understood as advocating the practice of shower-bathing of this sort. Nevertheless, the Commissioners put an engine of severe punishment in motion, before obtaining an accurate knowledge of the circumstances post mortem. Thus they are a semi-medical body in constitution, whilst employing no deliberative process by which their title to that distinction would be established. The whole proceeding strongly displays the real regard of Commissioners for Superintendents, whom they seem not unwilling to victimize in marching after popularity. Circumstances of this painful kind not only display a deplorable absence of the right relation between the two bodies, but, together with the other medical matters of collision, also show that the Commission is pretending to preside over our affairs, without the necessary qualification and without liberality. That is a course not to be persisted in without public inquiry. . . . . .

"Whilst, then, the Commission retains its present mixed character, unanimity of opinion and uniformity of action amongst Superintendents can alone save the degradation of asylums and the personal derogation of their chief officers, both of which may be foretold as sure results, in due season, of the present theory and practice of the Commission. It is a question for the Association whether it is not now called upon prudently to influence its members who are Superintendents, inducing them to moderate that too ready spirit of conciliation and encouragement—that disposition to repose faith and give honour, before the proof has been obtained that honour and confidence are due. Many circumstances have arisen of late years which ought to incline Superintendents officially to regard Lunacy Commissioners with a feeling approaching to suspicion."

We are glad to observe from the proceedings of this increasingly large and influential association, that its next annual meeting, on the motion of Dr. Stewart, the Honorary Secretary for Ireland, is to be held in Dublin, for the first time since its establishment, upwards of ten years ago. The President elect for 1859, we perceive, is Sir Charles Hastings, of Worcester—a gentleman who, however eminent and well known as a respected and leading member of our common profession in England, is unknown as a psychologist, and we are free to confess that in a specialty, like the Association in question, we consider that unless the list of highly qualified men were totally exhausted—which we cannot believe that it is or can be—the honourable position of President should not be conferred upon those who are of no weight or authority, whether by their matured experience, writings, or otherwise, in the insanity department of the profession. We make these observations without meaning the slightest disrespect to Sir Charles Hastings, but simply on principle, and for duly upholding the proper status, influence, and independence of an invaluable Association, provided that it can be kept clear of cliqueism, and not made a tool of in anywise to raise the vanity or promote the selfish interests of any man or set of men. We have neither time nor space to particularize the other interesting portions of this Number of the Journal, except its concluding editorial article, headed, "The Newspaper Attack on Private Lunatic Asylums," which is written with considerable spirit, point, and ability, against the newspaper press writers for their reckless onslaught and "hounding on the dogs of war," from the "Thunderer" down to the meanest "rag," upon a whole class, because one of their order grossly abused, or rather, in an evil hour, permitted himself to abuse his trust: a line of procedure which, to say the least of it, was unfair and un-English in the extreme, and most derogatory to the so-called "Fourth

Estate," for which we have the highest respect, and whose enormous power for good or for evil cannot be denied. But on this very account that estate should be careful not to ignore justice altogether, in a mistaken and rabid desire to serve the public. And here we feel it only a matter of duty to observe that, excepting this most unjustifiable conduct of Mr. Metcalfe, and his utter forgetfulness of what he owed to "the weaker vessel," to his profession, and to himself, his antecedents were all in his favour—nay more, highly to his credit, and his conduct as the proprietor of a private asylum such as to win for him the affection and esteem of his patients generally, for his always humane, considerate, and irreproachable bearing towards them. No doubt he met with the veriest Tartar in the person of the female patient who escaped from his care, and in endeavouring to recapture whom he placed himself in so unbecoming and so false a position. Under such circumstances, therefore, some sympathy is due to Mr. Metcalfe, and most undoubtedly justice should be mingled with mercy towards him, as we hope ultimately it will. There is a sentence in this "newspaper attack" article, a portion of which we cannot pass by unnoticed. The writer says :—"In referring to any defect in the Lunacy Statutes, although it may exist but in theory, it is but just to that great and good man who *reformed the treatment of the insane in Ireland*," &c. We have italicised the portion we must join issue upon with the able editor who penned it. "The great and good man" referred to we presume to be Lord St. Leonards, so well known in Ireland as Sir Edward Sugden. What his special greatness and goodness were, we shall not now stop to inquire; but we demur altogether to the statement made, that he reformed the treatment of the insane in Ireland. The treatment of that class, in both public and private asylums in this country, was unexceptionable, enlightened, and humane, time out of mind, so to speak, before Sir Edward Sugden set a foot upon Irish ground, or his dreaded name was lisped in the halls of our law-courts. Sir Edward Sugden "reformed the treatment of the insane in Ireland" in this way, namely, he was the instrument with the Government of the day in having imposed upon our public asylums a code of "general rules, made, framed, and established by the Lord Lieutenant and Council of Ireland, March 27, 1843," which in its chief points was impracticable; and from that time to the present has been felt as a most grievous incubus, and the cause of much heart-burning and discord here and there in the district asylums. One of the rules in this code was—that, too, upon which the entire good management of the institution hinged—

that an *extern* official, in the person of a visiting physician, to attend thrice a week (except in such asylums in which the number of patients exceeded 250), should direct the course of moral and medical treatment of the patients, their amusement and employment! Now could anything have been more preposterous than this? Well, so preposterous was it found, that the rule became a dead letter in practice, and a new order of things took its place, that of putting the power into the hands of a resident, instead of a non-resident or visiting physician. Again, "this great and good man,"—as our contemporary chooses to style him, in the plenitude of his editorial good-nature and gratitude, not in the spirit of toadyism, we feel assured,—by a stroke of his then all powerful Lord Chancellor's pen, deprived the officials of the benefit of obtaining retiring allowances by scoring out a clause in a Bill which afterwards became an Act, providing for the same on a liberal scale; and not until the expiry of more than twelve years afterwards was this boon (on a very miserable scale, however), squeezed from Parliament for so deserving and hardly pressed a class of officials. Such were some of the *good* deeds of this "great man" in connexion with the "reforming of the treatment of the insane in Ireland," and, having thus plainly stated them, there we shall leave the matter.

21. The only Number of the "American Journal of Insanity" which we have received since our last Review, is that for April of the present year. It opens with an able paper on "Moral Insanity" which is well worthy of perusal; and the following conclusions at which the writer arrives on this peculiar species of perversion of the moral faculties appear sensible and just:—

"The general tendency of the doctrine of moral insanity is bad, whatever show or real feeling of humanity there may be in it. It is bad in a religious view, because it tempts men to indulge their strongest passions, under the false impression that God has so constituted them that their passions or impulses are not generally governable by their will or their reason, and that, therefore, there is no punishable guilt in indulging them. This is fatalism. It is bad in a legal view, because it protects from due punishment offences which, with the self-denial and self-control that men rightly trained and rightly disposed are quite capable of exercising, might be avoided. It tends to give to bad education, loose habits, vicious indulgence, neglected parental control, and disobedience to God, an immunity from the prescribed penalties of crime, that is not warranted by the Scriptures, the law of reason, or any codes of human law that assume to be founded on the law of reason or the law of God. We cannot, therefore, concur in recognising as physical disease, without clear

absolute proof of its being such, after a most thorough examination by the most thorough experts, any distinctive form of insanity that is so liable to disorganize and nullify the code of criminal law as moral insanity is. It is elastic enough, if well stretched, to cover every possible shade and degree of criminality, that has not a transparent guilty nature. It has already been made a cloak for homicide, arson, theft, lying, and drunkenness, under characteristic though somewhat barbarous terms. It has almost protected the most conventional of all crimes, forgery; and probably would have done so if the dead languages could have supplied a proper-sounding phrase to describe such a novel form of mania, and that would delude courts and juries into a belief that such a phrase implied some scientific or psychological discovery to take the guilt out of sin, and convert crime into innocence; which, we conclude, is the ultimate result of the doctrine of moral insanity."

There are several other papers, &c., in the Number before us, of this well-conducted Journal, which, however, we are unable in this Review, already so greatly extended, to take any special notice of. We wish that, for the future, means would be taken to supply it regularly as it comes out, and not only now and again, as has been the case latterly.

22. During the year which ended on the 31st March, 1858, the patients treated in the Belfast District Hospital for the Insane are thus stated and accounted for in the twenty-eighth Annual Report of that Institution:—

	M.	F.	T.	M.	F.	T.
In House on 1st April, 1857, ...				188	142	330
Admitted since, New Cases,	65	68	133			
Relapses,	6	8	14			
	—	—	—	71	76	147
Total under treatment during the year, . .				259	218	477
Discharged, recovered, . .	38	44	82			
Do. relieved, . .	14	12	26			
Died, ...	14	11	25			
	—	—	—	66	67	133
Remaining under treatment on 31st March, 1858, ...				193	151	344

The total Admissions during the year were 5 more than in 1857.
The daily average number of patients during the year was 342·59.

Notwithstanding the large additions made to the Institution a few years back, it, like so many other similar establishments, has had greater demands on it than it had the means of

accomplishing during the past year, as the annexed extract intimates:—

"The House, throughout the year, has been not only full, but overcrowded, as will be seen by the average daily number, exceeding 340; whereas, properly, there should not have been more than 330, and not even this latter amount treated without a strain on the capabilities of the establishment; but, owing to extreme urgency occurring in individual cases, together with endeavouring to avoid delay in the admissions in general, which seldom happened, the numbers have gradually increased, as stated, thus making a pressure in the house extremely irksome, and embarrassing in many respects. Establishments for the treatment of the insane should not, according to the repeatedly and unanimously expressed views of the best and most experienced authorities, exceed 250 (under the one roof), that number being considered the largest which can be treated efficiently, and have fair justice done to all parties—inmates and officers.

"At the present time the cases on the books for admission, as vacancies may arise, are 9.

"Fully two-thirds of the patients in the house are of the so-called incurable class—a class, however, requiring, for the most part, as much constant care and supervision as any other. And it is only proper to observe, and a point, too, strongly to be dwelt upon and maturely weighed, that, though this term 'incurable' holds good so far as regards its subjects being never again fitted to take their places in the busy world, yet the greater proportion of them is comparatively sane (and, to the casual observer, would appear entirely so), whilst under regular and systematic treatment and supervision, and capable of both enjoying and appreciating the means using for their care and benefit. This, in itself, is a great amelioration of so dreadful an infliction as insanity; and the thinking and humane portion of the community will see from this, that, though every Hospital for the Insane is populated as thus indicated, yet they are still fulfilling their important purposes very decidedly and beneficially, and, as regards society at large, doing not a little for the protection both of life and property, by having such cases secluded from extern excitement."

The social condition of the patients admitted during the year, is given as follows, and from which it will be seen that more than two-thirds were of the "single" class, thus favouring the belief that "single blessedness" is inimical to mental health:—

Social Condition of the 147 *Cases admitted during the year.*

	M.	F.	T.
Married, ...	19	19	38
Single, ...	50	48	98
Widowers and Widows, ...	2	9	11
Totals, ...	71	76	147

Two other interesting Tables are the annexed in regard to the ages of the patients discharged recovered, and the time they were under treatment, the largest number cured being from 30 to 40 years of age, and as to time, from three to six months, gradually decreasing afterwards, in the latter respect the longer continuance of the disease adding to its intractability:—

Ages of the 82 *Patients discharged Recovered during the year.*

	M.	F.	T.
Under 20 years, ...	2	4	6
From 20 to 30 years, ...	9	7	16
„ 30 to 40 „	8	9	17
„ 40 to 50 „	7	8	15
„ 50 to 60 „	9	7	16
„ 60 to 70 „	3	9	12
Totals, ...	38	44	82

Period of time the 82 *Patients discharged Recovered were under treatment.*

	M.	F.	T.
Under 3 Months, ...	8	5	13
From 3 to 6 Months, ...	14	17	31
„ 6 to 12 „	7	9	16
„ 1 to 2 years, ...	7	5	12
„ 2 to 5 „	2	7	9
„ 5 to 10 „	0	1	1
Totals, ...	38	44	82

The deaths which occurred during the year were in much smaller proportion than usual. On this head Dr. Stewart observes:—

"The death cases during the year, it will be seen on referring to the obituary table, were but 25 (14 males, and 11 females), being considerably less than last year's, when the number was 38. It may be observed, too, that there was a larger number under treatment, both in the aggregate and the daily average, throughout the past year, than the preceding one,—the former being 477, compared with 459 in 1857; and the latter 342, compared with 323; thus making the difference in this respect still more in favour of the past year, when the per-centage of deaths, calculated on the average daily number under treatment (which is the fairer method of taking it, and not on the total number), was under 8 per cent., an unusually low average in these institutions, which may be set down at between 10 and 11 per cent., and still not considered great. It is also to be remarked, that three of the deaths did not come under the ordinary category—one, for instance, was but six hours in the house when death suddenly occurred, from heart disease, of which the deceased

had been the subject for some time previously. In the second case a fatal issue was inevitable, the patient having been received from gaol in a completely prostrated state from the effects of a severe wound he had inflicted on himself with a suicidal intent; and, in the third, one of the females terminated her existence by suspending herself, by means of a bed-sheet, in a very ingenious and effective manner, from the window in her bed-room, between night and morning, on which a coroner's inquest was duly held by J. K. Jackson, Esq., when a verdict, in accordance with the above facts, was unanimously arrived at, and the immediate attendant in charge, and the establishment, exonerated from all blame in so unfortunate a catastrophe, but one which no human foresight could by any possibility have prevented. Indeed, it may be stated, on this head, that, considering the large number, always, of cases in every asylum, with a suicidal propensity strongly marked in them, and who are unceasingly on the watch to accomplish their purpose—and this, too, in the most unlooked-for and unsuspected methods—the surprise is, that so few are enabled to carry out the one object upon which their remaining faculties are entirely concentrated. The other causes of death were, viz.:—General debility, 8 (4 males, and 4 females); maniacal exhaustion, 5 (2 males, and 3 females); pulmonary consumption, 3 (1 male, and 2 females); apoplexy, 2 (both males); heart disease, epilepsy, paralysis, and scrofulous disease, each one (all males). The oldest male in the mortality list of the year was 73, and the youngest 19. The oldest female 65, and youngest 18. It should be observed, before dismissing this head of the Report, that the last year saw the conclusion of the mortal career of the first inmate received into the house, on its opening in 1829. This was a female, whose incumbency extended to the long period of twenty-eight years and upwards, and in whose history one or two matters worthy of notice here may be glanced at. During the progress of the building of the Asylum, this patient was known to have come to see it, and to have marked out a particular room for herself, she having a presentiment of approaching insanity, and one which proved to be too true. Having been under treatment some months, she had become, to all appearances, perfectly convalescent, and fitted for removal; but the very day on which her husband came to take her home she relapsed, and from that period to her dissolution there was never any further mental restoration,—severe and frequent attacks of high maniacal excitement periodically occurring all the remaining portion of her lengthened inmateship. During her abode in the house both her son and daughter were likewise patients. The former made a good recovery some years ago, the latter died under treatment, many years prior to her mother's decease, who, in neither instance, would admit that they were her children; but who, nevertheless, and more especially in the case of her daughter, manifested, in various ways, that a mother's love and feelings, however obtuse and dormant they might have become from the effects of long-continued mental disease, were still by no means obliterated."

The vexed question of restraint is thus shortly alluded to, and in a manner that none but the most fastidious and ultra humane could take exception to, and upon such it would only be the height of folly to waste words:—

"The cases requiring mechanical restraint during the past year were very few, as usual, it being the exception to the rule, the most perfect freedom not being enjoyed by all the inmates; and this not as a novelty during the past year only, but every year since the institution came into operation. Nor would this point of detail be now referred to at all, only that it appears called for, to place on record, that cases will arise from time to time, which not to restrain in their maniacal fury by the application of a strait jacket, or otherwise, would be nothing short of madness on the part of those charged with their treatment and the safety of the patient, as well as that of the attendants."

The fact of Ireland having taken the lead, and being beforehand so many years—now upwards of thirteen—with the sister country, in having the great and important advantages of an entirely distinct institution for "criminal lunatics"—those guilty of offences of more or less gravity, and acquitted of the penal consequences of the same on the ground of insanity—is mainly, if not altogether, attributable to the persevering efforts of the authorities of the Belfast District Hospital for the Insane, who thus succeeded in establishing a principle which is only now being recognised in England, and which never would have been, is quite manifest from the difficulties so long placed in the way of the Commissioners in Lunacy there, but for the great fact staring the authorities in the face of the existence of that principle in Ireland, who thus had to yield ultimately, and with no very good grace either, as we have already observed in the course of this Review, in giving one to England also. On this subject the Belfast Report has a paragraph which we annex, and with reference to which—should it so occur that fine-drawn distinctions will be attempted in order to evade the spirit and letter of the law, as seems to be apprehended by imposing criminal lunatics, whether stamped with major or minor offences, we take for granted that such will be firmly resisted, and no such contaminating element again permitted to find an entrance into our district hospitals for the insane. The Legislature has settled that point; let, then, others, whose bounden duty it will be, and especially the Inspectors, look narrowly to it, by not permitting or sanctioning the rights of the ordinary insane patient to be infringed upon in the slightest degree in this respect. The subject is a most important one to the character and best interests of our public asylums throughout the country, and should

be rigidly watched, as we shall feel it our duty to do now, as formerly, when we called special attention to what, at the time, appeared to us a very suspicious looking proposition in the Inspectors' Parliamentary Report, in reference to relieving the Central Asylum at Dundrum of its superfluous criminal inmates[a].

"In last year's Report it was stated that the establishment had then, happily, become entirely free from inmates of the 'criminal lunatic' class, which was so great a desideratum, and one for the accomplishment of which the Governors of this Institution were the first to bring before the proper authorities, and to continue doing so, year after year, until, ultimately, an Act was passed for the establishment of a Central Asylum at Dundrum, for the removal to, and future charge of, all cases acquitted of criminal offences on the ground of insanity. This freedom from such exceptional inmates will, it is to be hoped, be continued intact; and that no relaxing of the law will be had recourse to, to reconvert these institutions into gaols, for the 'custody of lunatic prisoners' of any description. The Act of Parliament above referred to is very explicit on this head, it distinctly enacting, 'that whenever, and so soon, as the said Central Asylum shall be erected, and fit for the reception of criminal lunatics, it shall be lawful for the Lord Lieutenant to order and direct that all criminal lunatics then in custody in any lunatic asylum or gaol, or who shall thereafter be in custody, shall be removed, without delay, to such Central Asylum, and shall be kept therein so long as such criminal lunatics, respectively, shall be detained in custody' (section 8); and that 'the interpretation of criminal lunatic in the Act shall be construed to mean any person acquitted on the ground of insanity' (section 26)."

The Report mentions a "public court" having been held at the Belfast Asylum, by the Commission of Inquiry on Lunatic Asylums in Ireland, to the objects and constitution of which Commission we referred in our Review last year[b]. Two years and upwards have now elapsed since that Commission was issued, and yet to the present time no Report of their labours, over which they have been so long incubating, has yet seen the light of day[c]. The following is the reference Dr. Stewart has made to the above Commission :—

[a] See vol. xvi., No. 32, November, 1853, page 368.

[b] Vol. xxiv., No. 48, page 378.

[c] This Report has been issued as these sheets were passing through the press, and, in company with it, a reply by Dr. Nugent, the senior of our Irish Inspectors of Asylums; who has found it necessary to at once openly refute many of the statements contained in it. So important is the subject, that we shall notice both Report and Reply in our next Number.

"In May last the Commissioners of Inquiry on the Lunatic Asylums of this country held a public court here, in regard to the general management of the Institution, which was attended by a large number of the Board of Governors, and some others. The inquiry was conducted by examination on oath, and lasted an entire day. To the present time no Report has been made by the Commissioners, so that nothing is known of the changes which may be recommended by them in the existing state of the Asylums. Some additional returns have been called for by the Commisioners, and duly supplied to them."

The financial portion of the Report affords the following particulars of the expenditure incurred during the year, with which we close our remarks on this long-established provincial hospital for the insane:—

	£	*s.*	*d.*
Paid for provisions,	2861	14	2
Do. Clothing,	634	1	3
Do. Bedding,	167	19	10
Do. Furniture,	54	13	8
Do. Fuel and light,	320	11	10
Do. Soap, candles, &c.	115	13	4
Do. Stationery and printing,	40	16	10
Do. Advertising,	3	3	6
Do. Medicine, including wine and malt,	39	14	3
Do. Repairs and alterations,	309	17	3
Do. Farm and garden expenses,	52	17	10
Do. Insurance,	22	12	6
Do. Incidental expenses,	75	0	9
Do. Salaries and wages,	985	19	2
Do. Postage,	5	0	6
	£5889	16	7
To balance due the public,	1039	18	0
	£6929	14	7

23. The pamphlet entitled "The Parish Will Case" by Dr. Pliny Earle, need not be more than noted in this Review, however important to the parties concerned, it not containing anything that would particularly interest our readers on this side of the Atlantic. The author, Dr. P. Earle, the most eminent psychological physician in America, was called upon to give his professional opinion as to the soundness of mind of Mr. Parish, and his capability of disposing of his immense fortune by certain codicils; and the opinion he arrived at was,

and we think most properly, that Mr. Parish was "disqualified from the execution of the codicils in question, or the transaction of any important business." The pamphlet is exceedingly ably written, and the points of the case well argued, and does great credit to Dr. Pliny Earle for its clear and logical reasoning.

24. The volume in our list, entitled, "The Causes of Idiocy," is little more than the substance of a Report drawn up by Commissioners appointed under the authority of an Act of the Legislature of Massachusetts, in the year 1846, "to inquire into the condition of the idiots of the Commonwealth, to ascertain their number, and whether anything can be done in their behalf." Dr. Howe was one of three Commissioners thus appointed, and the Report, with its Appendices (of which there are six) and the Introduction, appear to have come from his pen.

In this volume the general reader will find a good deal to interest, and the professional man also some facts whereon to plant his leverage, moral and physical, whereby he may be disposed to endeavour, if not the entire removal of this evil from society (which, however, Dr. Howe thinks perfectly practicable), at least its alleviation.

Speaking of Dr. Howe's theory on the subject, which is thus announced, (p. 3), we are hardly disposed to go the entire length laid down, as regards either the evil or its proposed remedial treatment. The author's words are as follows:—

"It (idiocy) is merely the result of a violation of natural laws, which are simple, clear, and beautiful; which require to be seen and known only in order to be loved; and which, if strictly observed for two or three generations, *would totally remove from any family, however strongly predisposed to insanity or idiocy, all possibility of its recurrence.*"

Much in the same strain the author writes:—

"It may be assumed as certain, that in all cases where children are born deformed, or blind, or deaf, or idiotic, or so imperfectly and feebly organized, that they cannot come to maturity under ordinary circumstances, or have the seeds of early decay, or have original impetuosity of passions that amount to moral insanity, in all such cases the fault lies with the progenitors, &c. &c."

Now we hold such statements to be quite too strong. However judicious and good the prophylactic measures recommended by Dr. Howe may be (and we fully admit their judiciousness), and however large his induction, grounded as it is on the

case and statistics of the State of Massachusetts, we are not Utopian enough to believe that this malady, whether viewed in its physical or moral aspect (and it admits of both), will ever be eradicated from among the ills to which our common humanity is heir, even although Dr. Howe's remedies were universally adopted. Neither can we subscribe to the *dictum* last quoted. Experience is against it, as well as our *a priori* judgment. To say that idiocy is the universal result of viciousness in the parent, and that its appearance among us is unquestionably a proof of sin, would be, in our judgment, to treat the matter exactly as the disciples of the Great Teacher were disposed to treat the case of the man born blind, as recorded in the Gospel. The reply given to them is familiar to all, and, we think, will fully apply to the case before us also. With these exceptions, we can, however, cordially recommend Dr. Howe's book to professional and general attention and perusal.

25. The Report "On Insanity and Idiocy" in Massachusetts, by the Commission on Lunacy, and drawn up, it appears, by Dr. Edward Jarvis, is a very elaborately prepared State document, one which contains a large amount of matter of considerable local interest, and in no small degree general also. There is the greatest variety of statistical information in well-arranged, and, to all appearances, most carefully prepared tables in this volume, and altogether it is one calculated, we feel quite satisfied, to benefit those for the amelioration of whose pitiful and deplorable condition this means was taken to lay the foundation of plans that would afford permanent accommodation of the most humane and complete kind, in all its details.

26. After our Review had been, as we thought, completed, a copy of Dr. Cantor's Report on the Asylums for European and Native Insane at Calcutta reached us; and, not wishing to hold it over until our next Annual Review on Insanity, it being the first which we have seen in connexion with the state of the insane in our East Indian possessions, we have thought it better on the present occasion to give a notice, however necessarily short and incomplete, of its interesting contents.

The Report embraces a period of two years, namely, 1856 and 1857, for the Asylums at Bhowanipore and Dullunda, respectively.

The former one, for European patients, is situated about a mile from Fort William, close to the General Presidency Hospital, and is stated to be most eligibly circumstanced, both as to salubrity

and seclusion, which are two primary requisites for such an Institution. The ground attached to it, we regret to find, is exceedingly limited, being little more than two acres; it is thoroughly drained, and during the hottest season the temperature is nearly two degrees lower than that of Calcutta, while to the feeling it appears more considerable. In the first instance this Asylum was opened as a private one in the year 1817, but on no definite plan, and has since been added to from time to time. It is intended for both male and female patients, the accommodation altogether being calculated for 62, but in 1856 there was a maximum of 81 pressed into it, which, in a tropical country, and with only two acres of ground,—when properly there should have been from fifteen to twenty at least,—was a very adverse state of things for the health, comfort, and treatment of its inmates. It is no reasonable excuse to say that the Asylum is only intended as a temporary one for European patients, preparatory to sending them home ultimately; it is to all intents and purposes an Hospital for the Insane, and to be constantly used as such, and should accordingly be placed on a more liberal scale of accommodation in all essential respects, and none is of more consequence than an area, not of the smallest possible, but of the largest limits, the crowding such an establishment, and in a country under a burning sun, being, as Dr. Cantor most properly observes, much to be dreaded.

The following account of the wards, &c., will be read with interest even in this country:—

"The wards are well raised, and each room is provided with a window out of reach, and with a door half panelled, half grated. In Bengal such construction is preferable to solid doors with inspection plates, which here would obstruct the free circulation of air. Whenever required, the rooms can be darkened by means of a canvas curtain; but they are not lofty enough to admit of punkahs being slung. Each patient is, therefore, supplied with a palm-leaf fan. The doors are made to open outwards on a common verandah, which being screened by venetians and canvas curtains, offers shelter from the sun and wet. The verandahs during the day also serve as mess and lounging rooms, and are lighted at night. For the wooden bedsteads formerly used in the private Asylum, iron cots of the pattern used in European hospitals, without hinges, have been substituted, as they combine the double advantage of cleanliness and strength to bear attempts at breakage. They may also, whenever required, easily be fixed to the floor. As a general rule, bed utensils are suffered to remain in the rooms in cases of bodily diseases only, as each ward is provided with an easily accessible and airy privy and bathing room, with shower and ordinary baths. The floors are stuccoed, and either

unmatted or covered with loose mats, and so constructed as to admit of baths being administered at a moment's notice. In cases of bodily diseases, and during paroxysms of violence, the patients are treated in their own rooms. The absence of effectual means of seclusion, and of padded rooms, is a serious defect in the original construction of the Asylum. A single violent patient is sure to produce a number of imitators, who keep not only their own wards, but the whole Asylum, in a state of excitement. Want of space and of accommodation also offers material obstacles to the necessary occupation and recreation of the patients. An early application for the services of the Civil Architect to remedy such evils was speedily responded to, and plans have accordingly been prepared. The garden which surrounds the different wards is well laid out, and has, during the years 1856 and 1857, been liberally stocked from the Honourable the East India Company's Botanic Gardens. Indeed, it imparts to the Asylum a pleasing feature of rural quiet. The boundary walls being carefully kept out of view by luxuriant creepers, nothing which can remind of even the ordinary restraint of a hospital has been left. The garden, which is exclusively devoted to the enjoyment of the patients, might be taken to be a gentleman's carefully tended pleasure-ground. It is, however, of too limited extent, considering the paramount importance of extensive pleasure-grounds."

The views expressed in the annexed paragraph are also much to the purpose:—

"In most great asylums in England, the wards are classed in refractory, epileptic, paralytic, and convalescent wards, and one for dirty patients. It has, however, been observed that the disadvantage of a too rigid classification is, that it is apt to create so many intellectual castes, and to make the patients act or assume the part implied by the name of the ward. Chronic insanity is generally benefited by intercourse with sensible people. In the middle of the garden is situated a two-storeyed building, in no wise differing from any other Indian suburban villa. The ground floor contains the following accommodation:—an ante-chamber, where the dishes are served and carved; a dining-hall with punkahs, a side-room used as office and reading or lounging-room; two double and ten single apartments, occupied by gentlemen and lady patients. The apartments are cheerful, and open to the garden. They are furnished and lighted with hanging lamps, and have one corner partitioned off as a bath. The upper story consists of ten rooms, occupied by the apothecary, the matron and her husband, and an overseer. The hall, however, and two of the rooms are reserved, whenever required, for the use of a convalescent lady or gentleman. At first, before all the subordinate officers had joined, the upper storey was divided between the Superintendent and two of the subordinates. Such arrangement, questionable at best, was attended with a most serious objection.

The consequence of the Superintendent's living among, and being at all hours in immediate contact with the patients, led by degrees to the loss of the moral influence, the authority, which it is of the utmost importance that officer should possess over his patients. By comparison with the Asylum for Native Insanes, which is situated at a short distance from Bhowanipore, the difference in the Superintendent's moral power over the patients soon became very marked. It is necessary, or at any rate desirable, that the Superintendent should reside on the premises. But to preserve his moral influence, which is of vital importance in lunatic asylums, the quarters of the Superintendent should be perfectly isolated."

The dietary of the Asylum is as follows:—First-class table: Breakfast—eggs, fish, steaks, chops, cold meat, rice, fruit, preserves, tea, coffee. Dinner—soup, joints, or poultry; side dishes—vegetables, pastry, fruit, preserves; sherry, port, beer, lemonade, iced when desired. Supper—tea, and toast.

Second class, full diet:—Beef or mutton, bread, vegetables, butter, tea, rice, milk, sugar, flour, fruit, &c. &c. The patients are divided into two classes, solely according to their station in life, but with no reference to their means, and the two scales of dietary have been fixed according to the patient's previous social position. Both classes are equally open to poor patients, the first being composed of covenanted or commissioned officers, gentlemen unconnected with the public service, and members of their families. The second class consists of troops of her Majesty's and the Company's service, and of persons of either sex (Europeans or East Indians), unconnected with the public service.

The non-restraint system is practised by Dr. Cantor to the utmost possible extent, mechanical restraint being only had recourse to in cases of unavoidable necessity. On this subject Dr. Cantor expresses himself thus sensibly:—"Restriction in some form or other is *inseparable* from an asylum. Dr. Conolly himself allows certain exceptions in points for which the malady intrinsically disqualifies insanes." Particular instances in which restraint is unavoidable are then cited, where "rigid fingerless gloves, and a strait waistcoat, have been found beneficial." Dr. Cantor further and pointedly observes on this subject:—"How to meet them" (certain specified cases) "without having recourse to some humane contrivance for mechanical restraint, is a problem which, however, those philanthropists who have carried the non-restraint system to its greatest perfection have left subjects of speculation." The state of the Asylum as to admission, &c., during the year 1857, was as follows:—

	M.	F.	T
Remaining under treatment, January 1, 1857, ...	39	23	62
Admitted since, ...	29	4	33
Total under treatment, . . .	98	27	95
Discharged, recovered, ...	9	0	9
,, improved, ...	1	3	4
Dispatched to Europe, ...	25	2	27
Died, ...	4	0	4
	39	5	44
Remaining in Asylum, December 31, 1857, ...	29	22	51
	68	27	95

The professions and occupations of those admitted during the above period were:—Captains, 2; lieutenants, 3; assistant-surgeon, 1; priest, 1; surveyors, 3; medical subordinates, 5; soldiers, 21; seafaring men, 13; tradesmen, 4; writers, 9; no employment, 6; gentlewomen, 3; soldiers' wives, 7; tradesmens' wives, 27. Total, 95.

The countries to which the patients admitted belonged were:—England, 14 (13 males, 1 female); Scotland, 6 (males); Ireland, 23 (18 males, 5 females); Wales, 1 (male); Spain, 2 (males); Sweden, 1 (male); America, 1 (male); East Indies, 44 (24 males, 20 females); Armenia, 2 (males); Africa, 1 (female). Amongst the supposed causes of insanity the following are the principal:—Intemperance, 22 (18 males, 4 females); religious enthusiasm, 14 (11 males, 3 females); epilepsy, 9 (6 males, 3 females); domestic distress, 7 (2 males, 5 females); congenital, 5 (2 males, 3 females); masturbation, 3 (males).

The causes of death were—exhaustion, dysentery, cholera, old age, each, 2—hemiplegia, abscessus cerebri, apoplexy, diarrhœa, and caries, each one. The Report contains the particulars of the post-mortem examinations which were made in the above, which are full and suggestive. The rules and regulations for the management of the Asylum, the Physician-Superintendent being properly vested with the fullest authority, are embodied in the Report, and appear well adapted for their purpose.

The Asylum at Dullunda is for pauper natives alone, and is a mile to the southward of Fortwilliam; it covers a little more than nine acres, and is occupied by Hindoos and Mussulmans. The following was its state for 1857:—

	M,	F.	T.
Remained under treatment, 1st January, 1857, ...	206	55	261
Admitted since, ...	154	52	206
Total admitted and readmitted, .	392	122	514
Discharged, cured, ...	64	18	82
„ improved, ...	66	13	79
Died, ...	62	30	92
	192	61	253
Remained, 31st December, 1857, .	200	61	261
	392	122	514

The causes of the deaths in the above table were as follow:—Dysentery, 32 (23 males, 9 females); diarrhœa, 15, (7 males, 8 females); exhaustion, 13 (8 males, 5 females); disease of lungs, 8 (males); epilepsy, 6 (4 males, 2 females); old age, 6 (3 males, 3 females); cholera, 4 (3 males, 1 female); anasarca, 3 (2 males, 1 female); apoplexy, convulsions, enteritis, epilepsy, erysipelas, and hepatitis, each, 1 (5 males, 1 female). Total, 92.

The native insane patients are stated by Dr. Cantor to be generally much more manageable than Europeans. The non-restraint principle is the rule in force at Dullunda, in the same manner as at Bhowanipore. In regard to their occupation, Dr. Cantor observes:—

"In 1856, in the Asylum of Dullunda, a plot of ground was under cultivation with sugar-cane; some of the patients assisted the gardeners, and a few, the cooks. The occupation, however, left something to wish as far as regarded adequacy and regularity. Employment of insanes, having for its permanent aim the well-being and possible cure of the patients, is a means to those ends only. What will pay or prove remunerative, need not be lost sight of,—but as a secondary consideration. If the labour be not perfectly voluntary, but be suffered to become compulsory, not only will the object in view be lost, but what was wholesome becomes the very reverse. This is precisely the point of difference between the labour of insanes and of prisoners. Much more work might be done than the number of hands do at Dullunda, but then it could only be effected by compulsion."

The dietary and clothing of the Dullunda patients are given in the annexed extract:—

"The patients are dieted and clothed by private contract at a fixed monthly rate of Rupees 3 for each patient. The provisions are submitted to daily examination, to insure their quality and quantity being unexceptionable. They are far superior to those which the patients, who almost all belong to the poorest class of natives, are accustomed to in health. To the majority, who on admission present a sad spectacle, the Asylum must appear like a grand mansion, and the effects of comfort and regularity soon become apparent in an improved physical condition. The following scale of diet has, during a number of years, obtained in the Asylum, first at Russapuglah, and later at Dullunda.

"At 6 or 7 A. M.—Wheat porridge, 2 oz.

"At 10 or 11 A.M.—Rice, 10 oz.; pease, 4 oz.; vegetables, 4 oz.; salt, $\frac{1}{2}$ oz.; spices, 2 drachms; butter, 2 drachms; sugar, 2 drachms; betel-nut, $\frac{1}{4}$; paun-leaf, 1; hookah tobacco, 2 oz.

"At 5 or 6 P. M.—Rice, 8 oz.; beef or mutton, 4 oz.; fish, 4 oz.; vegetables, 4 oz.; oil, 2 drachms; salt, $\frac{1}{2}$ oz.; spices, 2 drachms; betel-nut, $\frac{1}{4}$; paun-leaf, 1; hookah tobacco, 2 drachms. Buttermilk, 12 oz., and potatoes, 8 oz., are allowed once a week. This is a bare standard scale of full diet, to which are added daily indulgencies, such as sweetmeats, cigars, fruit, &c., as rewards for good conduct. The hospital diet is modified according to each individual case. Extra articles, such as poultry, milk, tea, bread, &c., are separately accounted for; wine and spirits are obtained through the Commissariat Department. The clothing consists of the few articles of dress worn by the poorer classes of natives of Bengal. Each patient is supplied with a woollen blanket, three or four yards of cotton cloth, a sleeping mat and bedding of gunny. Shoes are articles of luxury, and given as such, when asked for. The great majority of patients are admitted in a state bordering upon nudity, and are, therefore, on discharge permitted, not only to retain the Asylum clothing, but the magistrate of the 24-Pergunnahs bestows charities to speed the penniless to their distant homes."

We are unable, from press of time, to devote more attention or space to this excellent Report of Dr. Cantor, and cannot conclude our review of it without expressing our great satisfaction at finding that the insane patients in the Bengal Presidency are under the care of a member of our profession of such enlightened and eminently humane views as Dr. Cantor, whose Report in all its details does him the highest credit. The Government also deserve much praise for the liberal spirit in which they seem disposed to provide for the due treatment and maintenance of both the European and native insane of Bengal.

Lectures on the Diseases of Women. By Charles West, M.D., &c., &c. Part II.—*Diseases of the Ovaries, &c.* London: Churchill. 1858. 8vo, pp. 247.

The first volume of these Lectures we noticed at considerable length in our pages[a]. We felt much pleasure in bestowing upon it the highest praise, though not more than it deserved. The second and concluding volume now appears, and within the period specified for its publication. The subjects of which it treats are:—Inflammation of the Uterine Appendages, and of the Pelvic Cellular Tissue; Uterine Hematocele; Ovarian Inflammation and Tumours; Diseases of the Female Bladder; Diseases of the Urethra and Vagina; Diseases of the External Organs of Generation.

Inflammation of the pelvic cellular tissue (or pelvic cellulitis, as it is frequently called) is a subject of much interest, and one to which a good deal of attention has been directed of late years, owing to the writings of Doherty, Lever, Churchill, Grisolle, and others, although the disease was very well known to many of the older accoucheurs, and has been well described by Puzos. Dr. West's account of it is clear and comprehensive. The most frequent seat of this inflammation he considers to be the cellular tissue contained within the folds of the broad ligament, such having been its seat in *thirty-four* out of fifty-two instances.

Next in frequency he finds are the cases where the cellular tissue between the uterus and rectum is affected; while those in which the cellular tissue between the uterus and bladder is attacked are much rarer. Inflammation of the cellular tissue underneath the parietal layer of the peritoneum, between it and the abdominal muscles (the external peritonitis of some writers), he thinks, is of very rare occurrence as an idiopathic or original affection, and in this our own experience entirely bears him out; but that it is not unusual as a complication or extension, we might say, of cellulitis of the *ligamentum latum uteri.* It is now well known that this disease may come on independently altogether of previous delivery or miscarriage; and Dr. West further shows that in this class of cases the tendency to suppuration and the external discharge of pus is as great as in the cases where the cellulitis succeeds to parturition, since it happened in *nine* out of fifteen instances of the former kind, and in *eighteen* out of thirty-seven of the latter. This disposition to suppuration in the non-puerperal cases is

[a] Vide No. 43, August, 1856.

an important practical point, and amply borne out by the facts brought forward by the author. His remarks upon the question of puncturing the tumour after the formation of matter has become known are sound and rational. He writes:—

"I believe that, as a general rule, it is safer to leave the emptying of the abscess entirely to nature, rather than to attempt the evacuation of its contents by puncture; those cases always excepted in which the inflammation has attacked the cellular tissue external to the peritoneum, and when the abscess consequently points in the abdominal wall. In those cases the very tardy advance of the matter towards the surface may sometimes be accelerated by the application of a blister; for even here it is not expedient to make an incision so long as any considerable thickness of parts intervenes. In the far more frequent instances in which the seat of the mischief is within the pelvic cavity, the pus tends to escape *per vaginnm* or *per rectum*, and the attempt to anticipate by puncture the exact course which it may take is very frequently unsuccessful, and not always safe. The natural relation of parts is much changed by the effects of the inflammation; the swelling and tension of the vaginal walls extend far beyond the limits which circumscribe any actual collection of matter; and it is very likely that the trocar may be merely thrust through hardened textures, and, though passing very near to the collection of matter, may entirely fail to enter it. The extent and relations of the tumour can be most accurately determined, and puncture can consequently be most safely performed, when the cellular tissue between the vagina and rectum has been the seat of the inflammation; and a Pouteau's trocar introduced by the vagina will generally reach the matter, if the indications of its presence have been distinct. In one case, where inflammation of the cellular tissue between the uterus and bladder had issued in suppuration, the escape of ten ounces of pus on puncture being made, proved the expediency of the interference. In a few days, however, the vaginal tumour had re-acquired its former size; the puncture was repeated, but no pus followed, for the trocar had at once entered the bladder through the firm and œdematous vaginal wall; an accident which fortunately was not followed by any bad consequences."

Recent observations have shown that effusions of blood may take place in the neighbourhood of the uterus, in the non-gravid state, giving rise to symptoms of a very alarming kind, and occasioning the formation of a tumour in this situation. For this disease the name of *uterine*, *retro-uterine*, or *peri-uterine hematocele* has been proposed. The blood may be extravasated into the cellular tissue surrounding the inferior portion of the womb, or into the peritoneal cavity itself, in which case the blood lodges in the *cul-de-sac* between the uterus and the

rectum. Of this rare and obscure disease Dr. West has met with but four examples. He has collected, however, the general results of forty-one instances of uterine hematocele, including his own cases. *Thirty-three* of these terminated in recovery, and eight in death. The apparent causes of death in these eight cases were as follows:—In *four*, peritonitis; in *two*, hemorrhage; in *one*, phthisis; and in *one*, pyœmia. Our information respecting this disease, is, as yet, very deficient in many points: nevertheless, Dr. West's account of it, founded upon the histories of the above 41 cases, is clear and satisfactory.

The twenty-third and six following Lectures are occupied with the consideration of the diseases of the ovaries. Upon each of the subjects included under this head, he gives the fullest and latest information. We cannot at present follow him through the details. One point, however, cannot pass unnoticed, and that is the question of ovariotomy. A great deal has been said and written about this operation of late years, and it has gained many admirers and strenuous advocates on the other side of the channel. There seems to prevail a great mania for desperate operations amongst a certain class of English surgeons of the present day, and there has been quite a run upon excision of enlarged ovaries. Now we have always derived satisfaction from the reflection that in this metropolis ovariotomy has had no supporters. Irish surgeons have looked upon it rather with disapproval, and it has found no favour here. It has now been a good many years under trial both in England and elsewhere, and what is the result? What, we ask, is the real value of this procedure? There has been, one would think, sufficient time and experience to test its merits. But we shall let Dr. West answer these questions: no one is more competent to arrive at a just and impartial solution of them.

"From this wearisome collection of details, imperfect, sometimes conflicting, what inference may we draw with reference to the operation of ovariotomy? or is, perhaps, no conclusion at present possible, and must the decision of the whole question be adjourned to a future time, and to our possession of better information? Some points, indeed, must be left unsettled, but still there appears to me to be ground sufficient for some conclusion, and that, I fear, must be unfavourable to the performance of ovariotomy. . . . . These three reasons, the high mortality, which experience and dexterity have failed to lessen; the special hazard attendant on those cases where yet the operation is specially indicated, and the utter uncertainty in which we find ourselves, even in the most favourable cases, as to its probable result, have chiefly influenced me in the

formation of my opinion as to the general inexpediency of performing ovariotomy."

Such, then, are the conclusions at which this author arrives, after a calm, full, and deliberate survey of the results which have hitherto attended this capital operation. It is not to be questioned but that no one was better qualified to institute such an investigation. Possessing extensive information, great industry, and a well-disciplined judgment, Dr. West is peculiarly fitted to conduct this inquiry in the manner most calculated to educe the truth. We doubt not that the opinion at which he has arrived will have its due weight with the profession at large, and will have the effect of materially lessening the number of victims to this operation. It must be observed, however, that Dr. West does not interdict its employment altogether: he thinks that, "till we are in a position to lay down the indications justifying ovariotomy," and can "venture on any reliable grounds to express a prognosis as to the issue of our interference," the operation "seems to take its place by the side of those exceptional proceedings, the expediency of which must be determined by each one for himself, after a careful consideration of the peculiarities of the case, and the idiosyncrasies of the patient."

The author has given a chapter on a subject not usually discussed by writers upon the diseases of females, viz.:—"Diseases of the female bladder." We cannot regard it as an important addition to the category. Cystitis, in its acute, sub-acute, and chronic forms, is described, and the treatment pointed out. Irritability of the bladder occurring as a functional disease receives no separate notice, and yet in our experience it is much more frequently met with than is cystitis, and a most troublesome, refractory complaint it is. The use of carbonic acid gas as a local sedative in cases where this symptom is prominent, is nowhere mentioned: which omission rather surprises us, as this remedy has attracted a large share of attention for the last two or three years, and a great deal has been written upon it in the medical journals. Whilst speaking of this agent, we would mention that not the least important of its uses is in carcinoma uteri, where its application oftentimes exercises a more anodyne influence than strong opiates, and without giving rise to any of the disagreeable effects attending upon the administration of opium.

The concluding two chapters of the book relate to diseases of the urethra, vagina, and external organs of generation. Although some of the rarer and less commonly noticed forms of

disease are here described, together with those ordinarily recognised, still there are others which are passed over without receiving that share of attention which they deserve, or which might have been expected at the hands of so comprehensive a writer as Dr. West. For these and some omissions observable in other places, we cannot pass any censure on the author; he has prepared us for them, and candidly confessed to them. In the advertisement to this second part of the work he says:—

"Many subjects, indeed, that deserve a longer notice are touched on here but slightly; and others, of a purely surgical nature, are completely passed over, for I have not ventured to teach concerning matters with reference to which I feel myself to be still altogether a learner; while I have always regarded mere compilation, uncontrolled by large experience, as more apt to perpetuate error than to diffuse truth."

How true is this last sentence! It would, indeed, be well for medical science if its cultivators were more influenced by the principle which it enunciates. And yet, what is more common in medical writings than this sort of "mere compilation." A practitioner meets with an instance of some rare disease, or has an unusually fortunate case of medical or surgical practice, and forthwith he becomes an author. To give importance, not to say bulk, to his production, be it "contribution," pamphlet, or book, he lays before his readers all that has been hitherto written on the subject in hand, without correction of any kind, or with such critical remarks as his scanty experience suggests. Such a course as this is but too common in our day; and yet, we repeat, is it not far "more apt to perpetuate error than to diffuse truth"?

For the treatment of that painful disease, vascular tumour of the urethra, Dr. West employs excision, followed by the application of the actual cautery. Instead of this latter application, we have used nitrate of silver, and found it to answer sufficiently well. There are some cases to which excision is inapplicable, in consequence of the tumour growing from a large base: here we must trust to the actual cautery alone, or to the nitrate of silver, or to nitric acid. In one obstinate case this last was most efficacious, but it caused very acute pain, which the patient represented as far more intense than that produced by the lunar caustic, yet, at the same time, subsiding much sooner.

We must now conclude this brief notice. It is, we admit, very short, considering the importance and excellence of the book, and the deservedly high reputation of its author; but for

this we need hardly offer any apology, having given a lengthened review of the former part of the work, and all the praise bestowed upon it can with equal justice be pronounced on the part now before us. As a sound practical treatise, based on the extended experience of a close and accurate observer, whose views and acquirements are quite *au niveau* with the present state of medico-obstetrical science, this work is fairly entitled to the highest rank; and, as such, we strongly and heartily commend it to the attention of our professional brethren.

The British Army in India, its Preservation by an appropriate Clothing, Housing, Locating, Recreative Employment, &c., &c. By Julius Jeffreys, F. R. S., formerly Staff-Surgeon of Cawnpore, and Civil Surgeon of Futtehgurh. London, Longman and Co. 1858. 8vo, pp. 393.

One of the most important questions of the present day is how to retain India to the British Crown so that it may be a source of revenue, and not a tax upon the nation. This problem will require consideration directed to two distinct objects. Firstly, we have the retention or continuance in possession of the country; and secondly, the holding of it without (at all events) a pecuniary loss, if not an actual profit

We are now, to the surprise of the world, and almost even of ourselves, again masters of the whole Continent, and we control a mass of people numerous in proportion to ourselves as ears of corn to the oak which stands in the centre of the field in which it grows. We have, however, this difference inour simile, that whereas the oak retains its hold of the ground by means of its own tendrils and its own roots, we have been dependent for our reduction of the revolt, and retention of our position in the country, upon foreign aid. Unassisted by the Sikhs, the Ghoorkas, the Nepaulese, and some of the people of the plains, we could not, when the mutiny broke out, have continued even in the semblance of possession, and the very assistance rendered to us then has had the effect of implanting into the minds of these people a feeling of confidence in themselves, amounting almost to this, namely, that when they choose, the British *Raj* shall cease. Personal communication with officers of both services (Queen's and Company's), men long and well acquainted with the native character, have made us aware of the truth of this assertion, and of the utter importance of neutralizing this feeling as speedily as possible. There is but

one means of bringing about this end, and that is, the retention in India of such a body of European troops as shall be capable of overawing our late worthy allies, and demonstrating to them the utter inutility of any attempt on their parts at *emeuté*. Granted, then, that this be (as it confessedly is) the sole, the only, mode of securing our ascendancy in India, and remaining undisputed masters of it, surely the question that first arises in connexion with it will be the means by which this force can be permanently maintained in full efficiency. It is of no use to have an army on paper amounting to such and such a strength; the force hereafter to be kept must be over and above all casualties,—men capable of being at any moment brought into the field, and kept there at any period of the year. To enable the European constitution to withstand the evil influences inseparable from the climate is the object aimed at by Dr. Jeffreys, and the subjects which he has chosen as best calculated to meet this end refer to the clothing, housing, locating, recreation, and useful employment of the troops.

Preliminary to entering upon the consideration of these different objects, Dr. Jeffreys introduces to the reader some very valuable (and valuable because practical) observations upon tropical virulence and effects of exposure to the sun. He treats of the "action of the sun on the head and system generally;" and the action of the sun's "rays in inducing disease;" as well as the real causes of diminished "illness in regiments after some residence in India."

In reference to the dress of the soldiers, the author observes:—

"The subject DRESS, has been given a primary position, not from its possessing a superior importance to the HOUSING and OCCUPATION of the soldier, for, on the return of tranquillity, these will assume greater dimensions, but because he is now in the field, and in danger of dying there before the question of rightly housing and employing him can have a practical solution."

"To guard against any prejudgment of the dress proposed, it may be well, without anticipating the subject, to invite the reader's attention to a few points here. In the first place, in the dimensions adopted in the several forms of helmets, it was felt to be necessary that some standard should be selected. It might be a maximum, a medium, or a minimum. Upon consideration, the first has been chosen, the primary point being adequate protection. The several parts, divisions, and materials, and their respective *proportions* having been decided, as nearly as was possible beforehand, the dimensions may be reduced to such an extent as may be deemed necessary for the efficiency of the soldier. In the case of cavalry, with their

quick movements through the air, and against wind, it may be requisite to squeeze down the dimensions of the head-dress more than were to be desired for security; but it would be indeed a folly to let the mind be so carried away by partial and commonplace views as to rush into the extreme of scantiness, and to ruin the constitutions of a whole corps in a season or two, from an overstrained desire not to incumber them."

"The Head-dress to be effective should possess such resisting power as to ward off entirely the whole rays of the sun throughout an exposure to its action of any duration; and not only from the skull, but also from the sides of the head, face, and neck. It ought also to transmit so copious a ventilation over the head as to encourage the perspiration to evaporate freely from it; and yet with a provision by which in cold weather the circulation of the air could be, at once, reduced or cut off. At the same time, such a head-dress should be no more cumbrous than was necessary to fulfil all those conditions completely.

"It is here proper to remark that while all unnecessary weight and bulk should, as a matter of course, be avoided, to object to that which was really necessary for his complete protection, would be not a whit more reasonable than to complain of the size and weight of the soldier's rifle and ammunition, and to substitute for them an air-gun and its pellets, which would better defend him against his human enemy than does his present head-dress against his solar. It may at once be affirmed with confidence that the soldier will be abundantly repaid the trouble of carrying every inch and ounce of helmet which is necessary for a total repulsion of the sun and prevention of its dire and complicated effects. We may in England, in the effeminacy of luxurious life, foster sensitiveness to weight and consult levity in our hats until 'the grasshopper will be a burden' should it settle upon them, but in the Tropics the *weight* of the sun's rays is such that even the effeminate would be thankful to bear any weight of defensive matter on their heads in lieu of that crushing sense of weight which knocks the strongest down at last. Well would it be worth while to reduce, if needful, his accoutrements by a pound or more, and add it if required to his head-dress. In fact, the head readily acquires the habit of carrying with ease ten or twenty times that necessary weight. Not to mention our maiden carriers at home of fruit and fish, and Welch butter-women balancing their firkin to market on their heads, walking, knitting, and singing as they go, we find in India itself the head to be the chief seat of carriage; *kuhars* (bearers) only employing the shoulders. The coolie trotting many miles with his five to eight stone of grain, the milk and well girls with their spherical foot or even eighteen inches of liquid, and women and children with their '*cowrie khapes*' of mud *running eight hours a day* and rearing the most formidable of fortresses, prove that by choice the head is selected for carrying loads, and for great distances rivals the back and shoulders. With

these facts before our minds we must perceive how wanting in judgment it would be to object to any addition of weight *necessary* for an effective head-dress.

This may seem a long quotation to give upon a single article of attire, but that one article is the most important of all the soldier's kit; let the head suffer from the effects of the sun, and immediate or remote consequences will assuredly ensue. Whilst we write these words, our vertex is even appreciating the influence of heat thrown down upon it from the gas-burner of the room in which we sit, bringing to our recollection the crushing load of solar rays which mercilessly used to bear upon us on the march, and unrelentingly pierce the canvass covering of our tent. None but those who have experienced the same can tell the overpowering sensation of weight which accompanies the sun's rays in India during four-fifths of the entire year, and any reasonable amount of burden on the head, in the shape of helmet, turban, or solar toupee, would be gladly borne in preference to these. As yet there is no form of military head-dress in use that will protect the soldiers from the sun, and that now proposed by Dr. Jeffreys, even if it fail in practice, should be tried; because in theory it is sound. We are utilitarians, and look to accomplishment of the end in view without caring in the least as to the appearance of the article that promotes our object; and if (as Dr. Jeffreys seems to think), the cumbersomeness of the look of the helmet should be the means of preventing its adoption, we shall not be satisfied. Opportunities enough will offer themselves yet, before the campaign in India is closed, for the new head-dress to be fairly tried, and we consider it a moral duty on the part of the authorities, after the sad experience they have had of deaths from sunstroke, to supply these helmets freely to the troops, and so test their merits in the only way they really can be tried. Dr. Jeffreys writes on this point in perfect fairness, for he says:—

"It is not necessary either to wait for a comparative trial made in India, or to adopt any plans untried. It would be easy to produce an artificial solar effect, which, so far as the various non-transparent *media* we have to do with are connected, would be abundantly parallel to the radiation of heat from the sun itself. By means of two planished tin or other metallic mirrors, the rays of a large open fire might be reflected upwards towards the ceiling of the room, and thence downwards, with varying degrees of obliquity. These rays may, for a *crucial* trial, be given a power threefold that of any solar rays, at the distance of our earth from the mystic luminary. Under the influence of these rays, two men may be placed

side by side, so as to be subjected to them equally. One of them may be clad in the usual way, his shako or cap encased in the cotton covering supplied to the troops in India; and the other may be dressed in the manner proposed. It will soon appear which of them is the first driven away from his post, and how many times longer the other is able to remain in his without inconvenience. The men may then be dressed, in succession, in the different kinds of helmets and tunics proposed in the preceding pages, to decide which of the several descriptions is most effective and otherwise comfortable. It is probable, that unless a fire of unusual dimensions were employed, it would be difficult to displace either of them. Presuming that any such result were obtained, it would surely be unnecessary to send such armour to India to be tested! The trial might be made at once, for it is my belief that a man caparisoned in the manner proposed might, according to which of the dresses was adopted, be enabled to sit out from five to eight men in succession in the ordinary dress of the soldier; and that, if our troops in India were clad in solar armour of this description, strokes of the sun would become of very rare occurrence, while the great accession given to epidemics through its action would cease. The simple heat of the atmosphere might then remain almost the only source of inconvenience from exposure during the day—an inconvenience not trifling indeed, nor to be lightly incurred, but of small account when compared with the assaults of the sun."

Dr. Jeffreys does not confine his views solely to the consideration of the helmet, or covering for the head, but gives his ideas and experience upon the form of clothing that is best adapted for the body generally for outer and for inner wear. We have, however, laid before our readers so much of the author's words on this subject, that we must refer those interested to the book itself, and proceed to the next division of the work, namely, that on the "Housing of British Troops in India."

Dr. Jeffreys first attacks the present system of lodging soldiers in bungalows or ground-flour buildings, and shows the advantage that will accrue from locating them on upper floors, and in houses properly constructed with double-roof ventilation; and next proceeds to show the manner in which this may be practically carried out. He says in reference to the housing of British troops in India:—

"Upon this very important question the Company's government has been in nowise wanting in solicitous care. But as no small number of the barracks throughout Hindostan have been destroyed by the rebels, and a large increase of accommodation will be needed for the future, the present is the moment for taking into consideration any modification in their reconstruction, since they would be attended with a double cost if made hereafter.

"To be as brief as possible. Many reasons may be adduced against the lodgment of European soldiers on a ground floor; which was universal when I was in India, and I believe is so still, and many and great advantages demonstrated in favour of an upper-floor housing of them. In the first place, every person who has studied the habitudes of malaria well knows how exceedingly more rife it is, especially the malaria generating the fevers of India, near the surface of the ground. The *natives*, though as such they ought to be more exempt, are much more prone to attacks of fever, owing to their sleeping close to the ground, than the Europeans who lie at a somewhat higher level, even where both are equally under shelter. Other causes, no doubt, are also in operation, but this is a main one. In some countries the inhabitants sleeping on an upper floor are almost exempt from the effects of malaria which is decimating ground-sleepers. The wealthier inhabitants of Calcutta live entirely on the upper floors of their houses. Moreover, the glare from the ground, and from the walls enclosing premises which are not spacious, aggravates the heat of a ground floor materially, and renders it painful to keep venetians open, and to look out even towards the shady side of a house; and the look-out upon an ever-present and glaring mud wall, often enclosing a barrack-ground, is but a dull and dispiriting sight for the soldier. Yet, near a town, with his present habits, he cannot with safety be trusted in unenclosed barracks. Again, wind, which is so much longed for, and so necessary during the hotter seasons, meets with many impediments near the ground which do not exist ten or twenty feet up. A refreshing breeze may often be felt at an upstairs window when a dead calm prevails below. Moreover, if quartered upstairs, the soldier could not be constantly truanting into the sun and glare of the barrack-yard, nor would he feel tempted to do so when he had spacious upstairs verandahs to walk and lounge in, with an open and cheerful view over the cantonments.

"Above his head he ought by all means to have a double roof,—the outer may be a high-pitched one of grass, such as is usual, and the inner a roof parallel to it at a distance of a yard, or it might be, though not so well, a ceiling of mats simply overlaid with grass or straw, and suspended from the rafters and tie-beams of the outer roof. Between them a free way should be given for a current of air to pass horizontally when pressed by wind, or vertically, through chimneys in the upper roof, when relying on its own buoyancy for motion. This current is needed as an ever-watchful *convector* of the heat, which *will* steal its way in treacherous quantity through every single roof, and, if not thus carried away by convection, come radiated down by the willing roof (the material of which is so adept a radiator) to mar the coolness below. The same amount of material that is often put into the present roof would suffice for both, though more ought to be allowed, and would prove doubly effective.

"The importance of a double roof is shown in the fact that a ground floor where there is an upper floor above it, is in general

much the cooler of the two, although there are causes, already referred to, which render it, when it has only a single roof above it, much hotter than an upper floor with a similar roof. To secure the best effect, the heat and stagnation of the atmosphere on the ground-level should be avoided by residing on a well-raised first floor; and the solar heat from above should be arrested by two roofs well apart, as described above, and by an upward current of ventilation through openings in the ceilings and roofs at all times when the set from below can be commanded, as will be described presently."

He next describes the modes of ventilating barracks for the soldiery, and introduces one which we doubt not is new to the majority of our readers. It is the *Subterranean absorption of Heat*, of which he says, that rightly employed, it can be made available with great advantage for the ventilation of buildings. He observes that:—

"While we are wont to look to the soil of the uppermost few inches only of the earth's surface, as that in which, for the most part, we have any interest; while, if we dig deeper into it, we do so only for water or for minerals; we are prone to overlook altogether, or to employ in an unreflecting and defective manner its capabilities as an equalizer of climatic temperaments. *Equatorial* climates are, for the most part, equable more than enough;—hot at all times. But near to and beyond the Tropics, and therefore over nearly all India, we may view the uppermost fifty feet of the surface of that continent,—or as many feet down as we can reach without the intrusion of water,—as one vast equalizing reservoir; ready to absorb, from any amount of air we may choose to subject to its action, a large proportion of its summer heat, even if we do not aid our reservoir in its annual emptying itself of such heat in the cold season, but leave it to conduct back, spontaneously, such heat tardily upwards to the surface during the winter months. But if we adopt proper measures for cooling thoroughly, in the winter, the mass of earth we select for our absorbing reservoir, we may have it emptied of more than the accumulated summer heat before the ensuing hot season, and brought down nearly to the *winter mean*, and ready, therefore, to absorb again much more heat than when it had to cool itself by the tardy spontaneous process of upward conduction through its whole mass.

"Furthermore, since it is by the agency of the *cold* air of the winter that we must empty our reservoir of heat, that air will become warmed by the process, and available for a tempered ventilation throughout the very season when the air is more sharp than is suitable to bodily frames more or less relaxed, and at rest; especially during sleep.

"In looking around for means by which to command such valuable results, we find them offered to us at once, if we will but exer-

cise a little thought, in the facility and cheapness with which wells are made throughout India. In the whole of the western provinces, and I believe, throughout *Hindostan* generally, wells about three feet six inches in diameter may be dug down to the water level at a cost of from eighteen pence to half-a-crown, where the depth does not exceed fifty feet. In most soils these wells are available without being guarded by any masonry lining, excepting under the water level, for the drawing of water throughout the whole day for many months, during several years. And in soils even to a considerable extent sandy, they can be dug, and will last as they are, *if not used*, for a great length of time.

"Now if we select, contiguous to a barrack of the largest size, a plot of ground only a hundred yards square, or a hundred and twenty yards long by eighty yards wide, less might do, and prick it over with wells about seven yards apart, the cost of digging them all will be only twenty pounds, and we shall possess two hundred to operate upon a cubic block of earth a hundred yards square, and say fifty feet deep. There are numerous parts of India, in which the water being forty or fifty feet or more from the surface, dry wells to that depth may be dug; but on the other hand, in many localities, as at Meerut, Bareilly, and Delhi, the depth is much less, in some not one-half as much. In such places the number of the wells would have to be multiplied; and evaporation from the water's surface and the humid sides of the wells would make up for the effect of their inferior depth. Upon the plan proving effective, it might form an important object in the choice of a station, to select localities in which the refrigerative well ventilation could be given the best effect—whether with deep wells and a drier air, or of shallow and a more humid. At Futtehgurh, Cawnpore, Agra, and in Bundelcund, &c., dry wells from forty to seventy feet deep may be dug.

"To put the wells in action we may proceed thus: dig successive rows of wells; the first of each row being sunk in the lower verandah of the barrack, throughout its length, though this is not necessary, and the mouths of this row being covered with wooden or bamboo gratings to guard against accidents. All the wells exterior to the building, excepting the furthermost of each row, must have their mouths closed and plugged for some feet down by straw resting on a simple bamboo frame propped across the well. If the ground is wanting for exercising the men, the mouths of the wells must be arched over with brick-work, and covered level with the ground around; but as this would be expensive, and the ground on one side of a barrack can generally be spared to that moderate extent, the simplest course would be to raise a common mud wall a foot or two high round each well, and to cover the straw, plugging its mouth with matting or a thin thatch. The earth dug from the wells would raise the level of the surface about a foot, and would in general yield, if the lower sand were not put uppermost, a fertile virgin soil. The whole area between the wells might form a productive garden, with its surface kept cool by frequent watering from a few wells

reserved and deepened for the purpose, and by being covered with vegetation; but it must not be such vegetation as could be a source of malaria. This use of the surface would appreciably check the travelling of heat downwards into our cubic reservoir below.

"The wells of each row must be made to communicate with each other, thus: from the bottom of one well, a horizontal passage about two and a-half feet high and fifteen or eighteen inches wide, must be cut to the bottom of the next well of the row, and from near the top of this well, below the straw, about ten feet beneath the surface of the earth, a similar horizontal passage must proceed to the next well, and from the bottom of this well a passage, and so on to the last well, according to the number of wells in the row. This last well being surmounted by a large cowl (turned to the wind by a fan-tail, or a lever moved by hand), and acting as wind-sail, the wind will blow down it and through the passage at bottom to the next well, then up it and through its upper passage to the third well, and pursuing this course through all the wells, will make its exit through the grating of the well, and into the verandah, which should be well enclosed. As in each row of wells the last would be similarly surmounted with a cowl, every first well of each row would pour forth air into the verandah.

"Supposing the barracks to be built with an upper floor for the residence of the men, the verandah above that in which the wells are may have its floors grated throughout, being laid with battens say one inch and a quarter wide, and three quarters of an inch apart. This should be an enclosed verandah, of course.

"We shall now have an abundant ventilation of cooled air in the hot season, and of warmed air in the cold, at all times when there is any wind. In a calm state of the atmosphere the ventilation may be easily maintained by mechanical aid; the moderate amount of labour required for which may be readily afforded when the army of *bheesties* and *coolies*, and bullocks, otherwise needed for tatties, is, with them, superseded by our subterranean refrigeration. The machinery by which an *artificial* current may with best effect be maintained will receive some notice presently.

"Of the capability of such a heat-absorbing and heat-exhaling reservoir as the block of earth with its cavernous surfaces would form, we may obtain some conception by a little calculation. First, as to the whole earthy surface holding a commerce in caloric with the air sweeping against it down and up the wells and through the transverse passages. Each well, where there are forty perpendicular feet available, and ten peripheral, will possess a surface of four hundred square feet, to which must be added one hundred feet more as the surface of one-half of the two transverse passages connecting it with the next wells. The acting surfaces of each well may then be taken at five hundred square feet; and of the two hundred wells at no less than one hundred thousand feet; which immense surface would be constantly acting upon the ventilating currents. These, while traversing it, being repeatedly inverted and changed in their

direction, could not fail to have every part of them brought into contact with the earthy surface. With respect to the capacity, as a reservoir for heat, of our block of earth of one hundred *yards* square and fifty *feet* deep, forty of which may be assumed available, it will be found on calculation to contain, deducting the wells' space, no less than three million six hundred thousand cubic feet, weighing about five hundred and fifty million pounds. Estimating the *specific* heat of earth and of air as about the same, supposing the surfaces of the wells to be at the commencement of the hot season at the temperature of sixty degrees, one hundred millions of pounds of hot air might pass through them during the ensuing hot months, and be cooled down thirty degrees, without raising the temperature of the mass of earth six degrees, by the time the cooling process ceased to be needed at the close of the warm months. Any warming of the mass by heat that struck down from the surface of the soil would, of course, be separate, but not such as to affect materially the calculation; since, if the quantity to be cooled were doubled, the earthy mass would only be heated by twelve degrees.

"Supposing the cooling to be employed about two hundred days, or about seven months, this would allow no less than half a million pounds of ventilating air daily, or upwards of twenty thousand pounds of air per hour, day and night. In bulk this would amount to more than two hundred and fifty thousand cubic feet; which would renew every hour the entire atmosphere of a barrack two hundred and forty feet long, sixty feet wide, and about twenty feet of *mean* height. Such a ventilation would be redundant, and could only take place in strong winds, since it would require a current of air through the wells of six miles per hour, and through their connecting passages of twenty. Of course the surfaces of the outermost wells first entered by the hot air would soon lose much of their coolness; but then the nearer wells would have theirs less reduced in proportion.

"In the cold season, during the warmth of the day, the action of the wells would not be needed, the barrack doors being thrown open. At such times the warmish current should not be allowed to blow through the wells, as it would stop the progressive cooling of their surfaces. To prevent this, the cowls shonld be turned with their backs to the wind, and perhaps a mat laid over each of the outer wells. At night probably not a fourth of the wells might be needed for the temperate ventilation they supplied, in lieu of the sharp night-air of the cold season; but while the air was cold, *i. e.* from soon after sunset till an hour after sunrise, the wind should be allowed to blow through all the wells, the rows not in use being made to blow their current out of doors. The air of the wells being the warmer of the two, the ventilation would proceed almost spontaneously. By such management, especially if mechanical aid were employed when the weather was calm, the terrene mass surrounding the wells would be brought down to a temperature much below the *mean* annual temperature of the climate, which annual mean would

be the utmost cooling to which even its deepest stratum could be reduced if the process were left to the natural action of conduction upwards through the whole mass."

Now, here again, we would say, let the plan be tried; Dr. Jeffreys may be wrong, and, if so, the money spent upon the experiment would have been thrown away; but, if he is right, what then?—why a very great end and object have been gained. For ourselves, we shall only observe, that in the rainy season we should expect these wells to become filled with water (either by percolation or direct entrance from above), and their action rendered nugatory; whilst, as reservoirs of standing water charged more or less with vegetable matter from the decomposing straw that forms the covering of their mouths, they might be productive of malaria.

From this, which we may term the major apparatus, we are led by Dr. Jeffreys to the consideration of minor plans of ventilation by machinery worked by horse or other power. Three such are introduced, viz., Dessaguiller's blowing machine, introduced first by Dr. Dessaguiller more than a hundred years ago, to ventilate the House of Commons, in which the air is propelled by passing off at a tangent through a centrifugal force imparted to it by rotation, by means of fans revolving in a barrel; next, the refrigerator contrived by our author, a kind of pendulum pump, formed of a frame eight feet square, hanging upon knife-edge hinges, between and close to parallel walls of masonry or wood, and oscillating between them. The frame on one side is laced with tape, over which surface are stretched across from top to bottom lappets of fine cotton cloth, overlaying each other like venetians. When this pendulum frame, which is well weighted at the bottom, is drawn back, the lappets flow up, and the air passes between them. When the pendulum oscillates forward, the lappets fall close, and the whole volume of air in the machine is driven through valve doors in the front, nicely poised, and opening readily to the pressure.

"The peculiarities of this air-pump are:—1st. The entire absence of friction in the piston, it being a pendulous frame hung on knife-edge hinges, and not touching the sides of its chamber. 2nd. Its requiring the force to act in one direction only; being a pendulum and weighted, it oscillates freely to nearly the same height as that to which it has been drawn. 3rd. The capacious free-way for the air, the whole surface of the frame being valvular, and the formation of the valves light and nearly air-tight, if close wove cloth is used, or oil silk."

And lastly, the thermantidote, as introduced into Bengal by Dr. Rankin, or modified according to the suggestions of Mr. Watson, for the particular description of which we must refer to Dr. Jeffreys' book.

Upon the employment of the thermantidote, he judiciously observes that—

"It should be borne in mind that when employed for ventilation the centrifugal machine should not act as a *blowing*, but as a ventilating instrument. Under no circumstances can any one sit prudently throughout the day in an *unintermitting* current blowing against one side of his person; especially if the temperature of that current is lower than of the air around him. A fan, or punkah, blows air alternately against the opposite sides of the person, and each puff is transient, and followed by an equal lull, during which the skin has time to prepare itself for the next impression. Hence most persons may safely sleep under punkahs oscillating over them all night; but, though often practised, it is with questionable prudence that persons sleep in an *uninterrupted* current of wind."

We cannot too forcibly impress this truth upon all.

Every section of this work will well repay the reader; but our own limits prevent us from noting more than one other, viz., "The Locating of British Troops in India." The results of the recent rebellion have proved to demonstration that small bodies of Europeans, placed under any good cover and behind a rampart, fairly provisioned, can hold out for any reasonable period against vast bodies of natives. For the future, therefore, it is clear that by far the larger proportion of the European troops can be stationed with safety on hill eminences, and the choicest climates for the residences of Europeans are to be found in the hill districts of each of the Presidencies, at elevations of from five to six thousand feet above the sea. All, then, that is required is to erect fortifications for small British forces, suitably placed, and constructed with a view to good permanent residence during peace, and with capability for resistance. Future outbreaks among the natives may then be set at defiance, for the efforts of any number may be frustrated until relief shall arrive from the hills. Dr. Jeffreys does not merely make suggestions, but with his suggestions he couples plain and practical recommendations as to the way in which the same are to be carried out:—

"Now, if common mud walls, reared similarly to the ramparts themselves, and of massive thickness, were run inwards from them as spurs parallel to each other, at a distance of twenty feet or upwards apart, and then connected by massive arches of burnt or even

of unburnt brick, they would afford over them an extensive surface, which, being made level, might form the floor of barracks on a level with the rampart or wall of the fort. Were properly solid barracks of unburnt brick, solid against the climate, but left to their fate in a siege from their exposed position, erected on that base, and given a double roof and the various other provisions for ventilation and cooling already described, there would seem to be no assignable reason why so well-raised and airy a habitation might not be as healthy as if it were without, instead of within the defences. If an open plain were preserved for a mile around, in a state of wholesome cultivation, the main bazaar which grows up round large stations being kept beyond that distance; if only barrack and domestic servants were allowed to reside within the fort, the various shopkeepers and labourers coming in for the day to their stores and occupations; and if proper measures were taken to guard against offensive matter accumulating in or near the fort, there would be good reason for expecting that it would offer a far more healthy residence for troops than most of such cantonments as I have known in India.

"The spacious arches below the barracks might serve various important purposes. In the ordinary times of peace, some of them might be reserved for use as military storehouses, others for granaries; the 'bunniahs' who supplied the forces being required to keep their grain stores in them. These corn-dealers have the neighbouring 'Zumeendars' commonly in their debt for advances, and get possession of their grain, which they bury in '*khuttees*,' large pits dug in the earth ten or twenty feet deep and lined with straw and chaff. The corn is often seized, reaped, and stored before it is fully dry, and is then not easily brought up from the pits to be turned and aired as often as it ought. Moreover, as these pits are commonly in the open air, though they are dug in the form of a dome, with small mouths like a kiln, which are closed up with earth, there can be no doubt that damp must often get into them."

With this practical remark, we take our leave of Dr. Jeffreys' book. It is a very valuable work, particularly at the present time. The only fault we find with our author is, his being a little too verbose. It is a great mistake to overload a book with words and sentences which take up the reader's time, and take away from the force of the argument *pro* or *con*. The class of men by whom it is desirable that Dr. Jeffreys' book should be read are statesmen and others who have little enough time at their disposal. It is, therefore, we repeat, a mistake to have the subject-matter of the work interspersed with sentences such as this:—

"The region of taste too much resembles Milton's bog for one who is simply depasturing in the fields of science to venture upon

it. Fashion's horoscope, revealing mysteries too deep for human reason, has pronounced it to be good taste, *for the current hour*, that the cover for ladies and soldiers' heads should not be a cover at all, but one-half or one-third of a cover. If we must bow to this her inscrutable arbitrament, we may surely complain at her inconsistency in not extending the rule to our furniture, where it would be comparatively harmless. Why may not the man who would dwell consistently, having feasted his eyes on the semi-bonneted head of his wife, cut away one half of the cover of his table, of his sofa, and of his chairs, and leave his furniture in strict accordance with her head, both as to elegance and protection?"

However, we hope to see Dr. Jeffrey's book soon reach a second edition, for it is one which should be read by all in any way interested in or connected with British India.

Practical Midwifery: comprising an Account of 13,748 *Deliveries which occurred in the Dublin Lying-in Hospital, during a period of seven years, commencing November*, 1847. By EDWARD B. SINCLAIR, A.B., F. K. & Q. C. P.,&c., &c., Ex-Assistant Physician to the Dublin Lying-in Hospital; and GEORGE JOHNSTON, M. D., L. K. & Q. C. P., &c., &c., Ex-Assistant Physician to the Dublin Lying-in Hospital. Dublin: M^c^Glashan & Gill. 1858. 8vo, pp. 574.

WE have very recently laid before our readers, in a communication from the able pen of the present Master of the Dublin Lying-in Hospital, a sketch of the rise of the Dublin School of Midwifery. The Report of Drs. Johnston and Sinclair, which we have now to bring under notice, will serve to show the tendency and character of the teaching afforded in this School at the present day. We have no fear but that those who examine this treatise will pronounce it well fitted, not only to maintain, but advance further, the high reputation already achieved by the Dublin School. The objects aimed at in the reviewing department of this Journal are various: it is sometimes necessary to deal, with no unsparing hand, with erroneous theories, unsound arguments, facts incorrectly observed, and, alas! sometimes even with false statements, and dishonest quotations. To the reviewer, the discharge of such duty is very painful, and if it were not for meeting, happily more frequently, with the productions of earnest cultivators of medical science, works for the most part defying criticism, and reducing his task to the simple one of indicating the kind of information that they offer to their readers,—the office of reviewer would be one to

be anxiously avoided. On the present occasion our duties are of this latter kind: we have merely to draw the attention of our readers to the important facts in this most valuable Report, collected, arranged, tabulated, and compared, with an amount of labour that must excite the wonder and admiration of all who contemplate it, but which can only be fully appreciated by those who have, like ourselves, attempted (though comparatively on a very small scale) a somewhat similar task.

It is probable that few will read this Report without comparing it with the Reports of the same Institution that have preceded it, and which have contributed so much to the high estimation in which the Dublin School of Midwifery is held. On doing so, important differences in the rules of practice laid down by the several Masters will be observed. We purpose, in pursuing our task, to bring some of these under notice, with a view to comparing the results obtained, and thus we hope to contribute towards the establishment of correct precepts on certain controverted points of practice. It is to the foresight of Dr. Bartholomew Mosse, the founder of the Hospital, that we are indebted for the opportunity of doing this, and it is not the least of the benefits he conferred on science and humanity that we have such an opportunity, which results from the clause inserted in the Royal Charter of the Hospital, limiting the period during which the Master, or principal physician, and assistants, can hold office. It is to two of the Assistant Physicians that we are indebted for this Report of the practice of the Hospital during the seven years it was under the Mastership of Dr. Shekleton. The Report of Drs. M'Clintock and Hardy is for the three years they held the office of Assistant under the Mastership of Dr. Charles Johnson; and Dr. Collins and Dr. Clarke published the Reports of the practice under their own Masterships,—altogether embodying the results of 47,183 cases of labour, thus:—

Dr. Joseph Clarke's Report, . . .	10,387 cases.
Dr. Collins' Report, ...	16,414 ,,
Drs. Hardy and M'Clintock's Report, .	6,634 ,,
Drs. Johnston and Sinclair's Report, .	13,748 ,,

a mass of statistics that will, we hope, be added to by each successive Master; but which, even if it should not, will form a standard for reference, and afford material for thought, so long as midwifery continues to be cultivated as a science.

In an introductory chapter Drs. Sinclair and Johnston supply us with a sketch of the history and internal management of the Hospital: the absence of information on these

points in the former Reports we have frequently regretted, as impairing in some measure the value of the observations recorded, to those especially who might never have had an opportunity of becoming personally acquainted, as pupils or otherwise, with such matters. Our readers are aware that the present Hospital was opened for the reception of patients in 1757, the occasion being celebrated, as a contemporary record has it, "in a most regular, easy, and genteel manner" by a breakfast, at which the Lord Lieutenant and the leading nobility and gentry were present, being entertained during the breakfast by a concert of vocal and instrumental music, and afterwards by an inspection of "fifty-two poor women, great with child, who attended in the hall with proper certificates for admission, all decently clothed in uniform, at the expense of the Hospital, each in a blue calimanco gown and petticoat, shift, handkerchief, cap, and apron, and thus appeared before his Grace, as President of the hospital, the Duchess and the rest of the governors and guardians, with many of the nobility and gentry, who all expressed the highest satisfaction."

It appears that from this period down to the close of the present Report in 1854, 15 physicians have held the office of Master, and 63 have been Assistants. During the first thirty years no record of the pupils was kept, but since 1786, there have been 2875 medical pupils educated in obstetric medicine, and, in addition, 656 women have been taught the nurse-tending of lying-in patients. An analysis of the 2875 gentlemen who have been registered shows that there were 2608 Irish; 220 English; 14 Scotch; 4 from the British Army; 8 from our Colonies; 16 were Americans; 2 Germans; 1 Swiss; and 2 Russians. Thus has the institution founded in our city by the unparalleled exertions and philanthropy of Dr. Bartholomew Mosse—an institution the earliest of its kind in the British dominions, and one still unequalled in the world, except perhaps by the hospitals at Paris and Vienna—afforded to our own countrymen a first-class education in midwifery; and at the same time drawn to our shores students from almost all parts of the civilized world. When we add to this, that the Hospital has afforded an asylum during their time of utmost need to 169,848 poor women, then indeed may we exclaim against the apathy and ingratitude of the nation, to whom even the name of their benefactor is almost completely unknown. Our city is ornamented with statues to kings, generals, statesmen, poets,—the names of Steevens and Dun are connected with the hospitals they founded; but Mosse, who established this most useful of charities; who conferred inestimable benefits on sci-

ence and mankind; who founded an institution which has ever since been a source of honour to our country, and served as a model to the civilized nations of the earth,—is unknown and forgotten. Would that we could awaken our fellow-citizens to a sense of what is due to themselves, and induce them even yet to acknowledge the deep debt of gratitude they owe to the founder of the Dublin Lying-in Hospital! A statue to his memory in the space in front of the Hospital, would be a suitable testimonial, and serve to connect his name with the institution which he raised at the expense of his life and health.

During the period to which the present Report refers, 13,748 women were delivered in the Hospital, giving birth to 13,933 children; of these, 968 were still-born; being at the rate of 6947 in 100,000 births, and of 7401 to 100,000 deliveries. Of the mothers, one-third were primiparous; and 163 died from all causes, puerperal and other, being at the rate of 1185 in 100,000. We have reduced these figures to the uniform standard of 100,000 cases for the convenience of comparison. The seventeenth Annual Report of the Registrar-General for England contains a letter from Dr. Farr, as to the causes of death in 1854, in which it is asserted that the deaths throughout England of women during the puerperal period for the seven years prior to 1854—the same time as that embraced in the Report of our authors—were at the rate of 530 to the 100,000 deliveries; and this low mortality has been adduced as an argument against lying-in hospitals; but any one who knows how the returns of the Registrar-General are made out will be slow to accept as true any conclusion deduced from them. In reference to the deaths of mothers, it will, no doubt, be difficult to convince some, that the great liability to epidemics of puerperal fever may not fairly account for the difference; but when we find it also deduced from these returns, that the proportion of still-born children throughout England is only half of that met with in the Lying-in Hospital, viz., 3580, instead of 7401 in 100,000 deliveries; and remember, that the returns for England are for all classes of society, those who have assistance and those who have not; and that in the hospital, whatever the increased danger from fever may be to the mother, the most anxious care is taken to preserve the life of the offspring, the conclusion is inevitable, that the returns of the Registrar-General are not to be depended on. Of the deaths in the Hospital, 70 arose from puerperal fever, being at the rate of 42,699 in 100,000 deaths, from all causes; or 519 in 100,000 deliveries. In England, it is stated that

the deaths from this cause were at the rate of 31,521 in 100,000 deaths, or 166 in 100,000 deliveries. The deaths in the Hospital from all causes, exclusive of puerperal fever, were 93, being at the rate of 57,055 in 100,000 deaths, or 675 in 100,000 deliveries; in all England, they were at the rate of 68,478 in 100,000 deaths from all causes, or 362 in 100,000 deliveries. But in the returns of the Hospital there appear 17 deaths of patients admitted in a dying state, and 40 deaths arising from causes in no way connected with the puerperal state, none of which would be returned to the Registrar-General under this head; these being deducted, there remain 36 deaths as arising from labour, being at the rate of 261 in 100,000 deliveries.

Of the 13,748 labours recorded, so many as 12,332 were natural, according to the definition of Denman, that is, nearly 10 out of every 11 cases, or 887 in 1000; if we compare this with the statistics collected by Dr. Churchill, it will be found to be much below the average, which may fairly be estimated at 944 in 1000. A nearly similar high ratio obtained during the period to which the Report of Drs. M'Clintock and Hardy refer, viz., 882 in 1000, a circumstance due, no doubt, to the anxiety of those, who have already had a bad labour, to get into the hospital, and thus one of great importance in estimating the usefulness and relative mortality of such institutions.

The number and severity of the epidemics of puerperal fever experienced are the great regulators of the mortality of lying-in hospitals. During the period over which this Report extends, the Hospital suffered from more than the average amount of this disease, at least, more than it did in Dr. Collins' time, the deaths being 70 from this cause, whereas, if they had observed the same ratio to deliveries that he has reported, they would not have been more than 49. Other causes, too, contributed to increase the gross mortality; but here we must allow the authors to speak for themselves; they say:—

"In order, however, to arrive at a correct idea of the mortality of the Hospital, we may be permitted to deduct from the total number of deaths those who were admitted in a dying state, which latter amounted to 17. We thus leave a balance of 146 dying from all causes, or, *quam proxime*, 1 in 94. Then, if we deduct from the above 146 fatal cases those whose deaths had arisen from visitations of puerperal epidemics, viz., 70 victims to that disease, we reduce the sum to the number of 76 dying from all causes, or 1 in every $180\frac{2}{3}$."

It is then shown that 40 of these 76 died from other than puerperal causes, the real causes of death being enumerated; and they proceed:—

"If then we deduct these from the 76 fatal cases, there remain 36 deaths which originated from labour, or 1 in every 381½ of those delivered. Lest, however, this calculation should be objected to, we shall follow the outline pursued by Dr. Collins in his Report of the Hospital during his Mastership, and we shall include the 17 cases that were admitted in a dying state. We find, then, following his outline, that of 13,748 women delivered, 163 died, that is, as before stated, in the proportion of 1 in 84⅓; if from this number be deducted the deaths arising from puerperal fever, these being considered accidental, and amounting to 70, there remain 93 who died from all causes, or 1 in 148¾; then, if we cull from out of these, those deaths which did not arise from the effects of labour, and which, as above shown, amounted to 40, we find that but 53 died, of whom it might be said their death resulted from labour, or 1 in 259⅖ of the entire number delivered. We may here remark, that amongst those whose deaths originated from labour, we have included three cases concerning which considerable doubts existed as to whether death did really result therefrom."

We may observe that Dr. Collins, after this plan, makes out his mortality from causes due to labour 1 in 244, and that Drs. M'Clintock and Hardy make it 1 in 250, showing a considerable progressive improvement, one that will be seen, when we come to notice tedious labours, to be due in a great measure to the greater promptitude with which assistance was given in them, and also to the nature of the assistance given.

Chapter I. treats of purely natural labour, in its three stages. As to the first and second of these, it is not necessary that we should dwell on them here; the rules of practice as to their management are well established, and unanimously received: at a few points only shall we glance, before passing to the consideration of the third stage, concerning which there is less of agreement.

When the membranes gave way too early in the progress of the case, it was found that the anterior lip of the uterus dilated very slowly, and was apt to get compressed against the brim of the pelvis, causing the pains to become irregular and inefficient; to remedy this, the patient was kept strictly in the horizontal position, and on her back, and in the interval of the pains the lip was supported as high above the presenting part as possible, and thus relieved from pressure. On this being done, the pains generally returned, but sometimes it was found necessary

to stimulate the uterus by enemata. This is a frequent cause of delay in the first stage. The treatment recommended by position is good; the administration of a full opiate, in addition, has in our hands been productive of decided benefit. We have tried the plan of supporting the undilated lip, but without obtaining any very good results.

On the next point we entirely disagree with the authors. It is said that generally the membranes gave way before the complete dilatation of the os, and as this did not seem to retard the progress of the case, but rather to hasten it, there was no hesitation to puncture them with the finger-nail at this particular period, care being taken not to allow the waters to escape too rapidly lest the funis should be carried down with them.

We have ourselves sometimes tried this plan of puncturing the membranes at this particular period, and have convinced ourselves that it is one of those pieces of meddlesome midwifery that should be avoided. We have more than once seen the progress of the labour stopped and have found the os to contract again after we had ruptured the membranes, and therefore we are now careful in our own practice to preserve them entire as long as possible.

The next point is one of the greatest practical importance, viz.:—that during the expulsion of the child care should be taken to follow down the contraction of the uterus with the left hand, and except when symptoms of asphyxia appear, the expulsion of the body of the child should not, in any way, be hastened, and we notice it merely to express our pleasure at finding it again enforced in a Report of the Hospital.

The correct management of the placental stage of labour is still a subject of controversy: different directions are given concerning it in the three Reports of the Hospital; Drs. Sinclair and Johnston describe the practice as follows:—

"During the third or placental stage of labour, the left hand of the attendant resumed the charge '*of the contraction*,' which had been under the custody of the midwife while the cord was being divided. The command thus obtained over the uterus was never lost until the placenta had either been artificially removed, or naturally discharged, which latter occurred generally in about a quarter of an hour or twenty minutes. The binder was not adjusted, either, till the completion of this stage, and even not then till a sufficient time had elapsed to indicate that the uterus was likely to maintain a permanent contraction."

Dr. Collins describes the method he adopted as follows:—"As soon as the head and shoulders are expelled, the left hand

is instantly placed on the abdomen, immediately above the fundus uteri, thus following down by a steady pressure this organ as it contracts, so as to bring it as low into the pelvis as practicable, without using violence. We keep up this pressure *most diligently* from five to ten minutes after the feet are expelled, and when the womb feels firm and well contracted we make the nursetender supply our place, until the child is separated and the binder put on. If, however, the uterus should not feel firmly contracted after the separation of the child, we continue the pressure with the hands for some time longer, until we have as far as possible effected our object; we then apply the binder."

Unfortunately, Drs. M'Clintock and Hardy do not give as explicit directions for the management of this stage a those we have quoted from the other Reports; but the practice of the Hospital may be pretty safely inferred from what they do say in the following passage. As we enjoyed the privilege of being a pupil of the Hospital when Dr. Johnson was Master, we may be allowed to state that the practice was, as indicated in the foregoing quotation, to follow down the uterus with the left hand till the feet were expelled, and then, giving it in charge to the nurse, till the cord was divided and the child separated, to apply the binder with sufficient firmness, and wait till the placenta was expelled, when the binder was again tightened. If hemorrhage or relaxation should occur, these of course required to be attended to; but in the absence of these, neither the *most diligent* pressure of Collins, nor the continuous pressure of the authors, was allowed to be practised.

Drs. M'Clintock and Hardy speak of the use of the binder thus :—"In the hospital the binder is considered one of the most indispensable articles belonging to the lying-in room, and the highest importance is attached to its use. . . . In applying it, the degree of tightness ought to be moderate and uniform throughout, so as to exert an equable pressure on the abdomen from the epigastrium to the pubis. When put on in this manner, the binder is not only a source of comfort to the patient, but proves positively beneficial, by compressing the uterus, thereby lessening any disposition to relaxation, and by preventing that feeling of debility and faintness (occasioned by sudden evacuation of the uterus) which always tends to diminish the activity of uterine contraction. It is not to be inferred from this, however, that the binder should be used as a substitute for the hand in cases of extreme inertia—by no means; but its presence does not much interfere with our grasping the uterus, and if it should do so, the hand may readily be passed underneath, and our

object be thus obtained. It can hardly be questioned but that a proper attention to the binder promotes the favourable separation of the after-birth; and in confirmation of this assertion we would state that in one instance only, throughout the period comprised by this Report, and for two years previously, had the hand to be passed into the uterus for the removal of a placenta retained from hour-glass contraction; and in a very limited number of cases was it required in consequence of inaction. That this operation (the manual extraction of the placenta) is one which may involve very serious consequences, every candid practitioner will admit; but in hospital practice particularly are its results to be dreaded. On this account it must be conceded that any management by which its frequency can be diminished possesses very great advantages, and cannot be too strongly recommended."

It will be observed here, that pressure of the hand is to be reserved for cases of extreme inertia. On comparing the results obtained by these varying plans of practice, there will be less difference found than might be expected; still there is sufficient to make us retain our preference for the plan we learned under Dr. Johnson. The frequency with which the placenta was retained from all causes is greatest in the cases reported by M'Clintock and Hardy; least in those reported by Collins. Retention from inertia was also greatest in M'Clintock and Hardy's cases, but least in Sinclair and Johnston's. Retention from irregular contraction was least frequent in M'Clintock and Hardy's cases; more than four times more frequent in Sinclair and Johnston's; and nearly eight times in those reported by Collins. Inversion of the uterus occurs once in the cases reported by Sinclair and Johnston; not at all in those reported by either of the others. With regard to hemorrhage, it is difficult to form any comparison. Drs. Sinclair and Johnston seem to have only recorded those cases in which it was sufficient to endanger the life of the patient. The others recorded all the cases, but specifying those in which it was of such an extent as to cause fears for the safety of the patient, and those in which it was immoderate, but not causing danger to life. It appears that it occurred during the third stage to a dangerous extent most frequently in Drs. Sinclair and Johnston's cases; least frequently in Dr. Collins'—a fact that our experience of the difficulty of teaching students to grasp the uterus properly leads us to attribute to some awkwardness on the part of the attendants. It has more than once occurred to us to find a student holding a fold of integument, under the impression that he had command of the uterus. The very pos-

sibility of such a mistake is one of our reasons for objecting to the plan of continuous manual pressure. It must, however, be admitted, that holding the uterus properly may be the most likely way to prevent the placenta being retained from inertia, and perhaps to prevent hemorrhage from relaxation. But then there is the difficulty of having this done correctly, and the increased liability to irregular contraction, which seems to be considerable, to counterbalance any benefits arising from it. Under such a plan, too, the liability to inversion is greater, whether we regard inversion as the result solely of irregular contraction, as it no doubt frequently is, or as produced by mechanical causes. Moreover, we consider the binder applied immediately after the birth of the child as being as necessary a compensation for the pressure suddenly removed from the large vessels in the abdomen, as it is in the operation of paracentesis. We have thrown the several facts that we have gleaned from the three Reports on this subject into the following tabular form, reducing all the numbers to the uniform standard of 100,000 cases, for the convenience of comparison. Thus, then, Drs. Sinclair and Johnston met with retained placenta 57 times in 13,748 cases, which is equal to 414 times in 100,000 cases; Drs. M'Clintock and Hardy, 28 times in 6634 cases; or 422 in 100,000; and Dr. Collins, 66 times in 16,414 cases, which is equal to 402 in 100,000.

	Sinclair and Johnston.	M'Clintock and Hardy.	Collins.
Retained placenta, from all causes, . . .	414	422	402
Ditto, from inertia, ...	152	241	225
Ditto, from irregular contraction, .	65	15	115
Ditto, from morbid adhesion, . . .	196	165	60
Hemorrhage during 3rd stage, endangering life, ...	189	150	115
Ditto, immoderate, but not dangerous, ...	Not specified.	467	389
Ditto, after expulsion of placenta, endangering life, . . .	167	120	134
Ditto, not endangering life, . . .	Not specified.	376	261
Inversion of uterus, ...	7	0	0
Hand or fingers introduced for the placenta, from all causes, ...	385	422	402
Ditto, from inertia, ...	123	241	225
Ditto, from irregular contraction, .	65	15	115
Ditto, from morbid adhesion, . . .	196	165	60
Hand introduced for hemorrhage after the expulsion of the placenta, ...	36	30	188

Closely connected with the method of managing the placenta is the management of the uterus during the interval

between the expulsion of twins. Drs. Sinclair and Johnston recommend that it should be commanded by the hand, and the binder not applied till after the placenta has been expelled. Drs. M'Clintock and Hardy, and Dr. Collins, give very explicit directions to apply the binder immediately after the expulsion of the first child; unfortunately, the details given do not enable us to institute any comparison between the progress of the cases under these different plans of treatment, but to this we shall again allude when we come to the section on plural births.

The natural labours are divided by the authors into three groups:—1st. "Purely natural," where the vertex presented at the brim, in some one of the four positions of Naegelè, and passed through the pelvis in the usual mode common to whichever of those four positions it originally took at the brim; 2nd. Those cases in which some other portion of the head than the vertex presents; where an upper extremity occupies the brim along with the head, or where the head, having originally presented in the third or fourth position of Naegelè, does not pass through the pelvis in accordance with the usual mode of progress of either of these positions. This group, called "varieties of natural labour," comprises face presentations; face to pubes; and arm with head. 3rd. Premature labours, placed with the anomalous. Of the first group there were 11,874 cases, being 863 in 1000 deliveries. Of the offspring of these labours, 206 were still-born, being at the rate of 1734 in 100,000; but of the 206 there were 120 putrid at birth, leaving 86 deaths to be accounted for as connected with delivery; the authors have it 85, but this is evidently an error. Of the cause of death, in 52 there is no record; in 10 it arose from delay in delivery; in 3 to preternatural pressure, the pelvis being under-sized; 2 were born with the heart beating after a quick second stage, in which the uterine contractions were strong, but so rapidly following one another as to be virtually continuous; and in these two instances all efforts at resuscitation failed; in 2 the head being somewhat over-sized, the cause of death was preternatural cranial compression; in 2 the funis was tightened round the neck; 4 were the offspring of delicate mothers, and were themselves ill-conditioned; 1 was born of a syphilitic mother; in 1 case the mother met with an accident; in another, with a fright near the completion of her pregnancy; 4 were delivered outside the wards; over-exertion during pregnancy is given as the cause of death in 2, and exposure to cold for 1. Of the 120 children born putrid, intra-uterine death could not be accounted for in 96. Of the remaining 24, syphilitic taint was evident

in 5; fright of the mother is said to have caused death in 6; a fall in 1; poverty and affliction, 2; over-exertion, 6; and 4 were children of delicate parents.

Of the children born alive, 146 died in hospital: in 33 the cause was not ascertained; 60 were weakly and extremely delicate at birth; convulsions carried off 13; trismus, 15; 3 were born outside the wards, and were in a dying state when brought in; 14 were overlain, either accidentally or intentionally; 1 died of erysipelas; 1 of icterus; 1 of sclerema; 1 was the subject of arrest of development; 1 died of hydrocephalus; 1 of hemorrhage from the funis, which was not observed by the nurse until so much blood was lost as subsequently to prove fatal; 1 died of hemorrhage from the bowels; and 1 had been the subject of artificial inflation.

Of the 11,874 mothers whose deliveries had been purely natural, 67 died; 41, of puerperal fever; 4, of phlebitis; 3, of typhus; 2, of acute bronchitis; 1, of asthma; 1, of acute pleuritis; 4, of pneumonia; 3, of phthisis; 3, of disease of the heart; 1, of mental depression; 1, of erysipelas; 1, of scarlatina; 1, from destitution; and 1, from abscess of the brain. All these facts, as well as the duration of the several labours and the sex of the offspring, are admirably set forth in a most elaborate table; after which the details of the fatal cases of the mothers are given.

Of the "varieties of natural labour" there were 57 instances; but the sum total of face presentations, face to pubes and arm, with head presentations, amounted to 89. Thus the face presented 40 times, but in only 31 did the labour terminate naturally; there were 33 cases of face to pubes, but 20 of them only were natural; and there were 16 of arm with head cases, in 6 of which only was the labour natural.

We must here express our regret that all these 89 cases have not been detailed in one chapter; their importance surely demanded this; the fact that they are scattered through different sections proves that the systems of classification in common use, especially where time forms an item in the definitions, are artificial and very insufficient; however, we must be satisfied with being told, the natural cases having been detailed, that "the remaining ones shall be accounted for in their proper places, under the classes of labour to which they belong." Of the 13 face to pubes cases, not coming under natural labour, 6 occurred in twins,—3 of which, although labour did not exceed 24 hours, it had to be completed by the forceps; 3 exceeded 24 hours; and in 1 the perforator was found necessary. Of the 9 face presentations, 8 exceeded 24 hours; of which 1 was

delivered with the forceps; 2, by perforation; 4 were tedious; 1 was a convulsion; and the 9th was a twin case. Of the arm with head presentations, 9 were twin cases; and 1 tedious, with funis prolapsed.

It is very important to observe that the rule of treatment in face presentations was to leave them as much as possible to nature, and that no attempt was ever made to rectify them, that is, to change them from face to vertex positions, the chief care being to guard the perineum. We know that some writers have recommended turning in face presentations, and that others have described methods for rectifying the position of the head, all of them more or less hazardous; but here we have the experience of this large Hospital proving the competency of nature to deal with such cases. Another important observation of the authors is, that in all face cases, no matter what the presentation at the brim may have been, the head emerged from the pelvis with the chin to the pubes: thus rendering quite unnecessary the most dangerous manipulations recommended by Baudelocque, Lachapelle, and even more recently by Meigs, for insuring its assuming this position.

In arm with head, and face to pubes presentations, attempts were made to rectify these positions, by supporting the arm, or turning the face, but in both cases the efforts were generally unsuccessful; always, indeed, it would appear in face to pubes cases. We object very decidedly to all these attempts; we are convinced that they are seldom if ever successful, and, except in most skilful hands, are full of danger. The arm, we believe, never comes down with the head, except in a roomy pelvis, and the majority of cases terminated without assistance, —such is our own experience; of the sixteen here recorded, in only three can we find any record of instrumental assistance being required; and in these the necessity arose, not from want of room, but from incidental causes, viz., prolapse of the funis in one case, and inertia in the other two. We were once called to a case of this kind, where, by the manipulations used to rectify the position, the humerus had been fractured; the funis, which was prolapsed, torn; and considerable swelling of the mother's soft parts produced. It occurred in the hands of a very ignorant practitioner, no doubt, but it is an example, even though an exaggerated one, of the dangers attending attempts at rectification. The condition of the mother rendered immediate delivery necessary, and we perforated; however, it is worthy of note, that it was the second time this presentation had occurred with this woman, and that under the care of the

same attendant, the previous child had been born naturally, though with the humerus also fractured in the unsuccessful attempts to rectify the position.

Dr. Collins records 33 cases of face presentations, and 12 of face to pubes, and distinctly states, "that the *position* of the child did not in any instance render artificial delivery necessary;" and that "all attempts to alter the position of the head in the early period of labour, when found presenting in either of the above-mentioned ways, are, in his opinion, injudicious. The labour should be treated as one perfectly natural." Of the 33 face presentations, all were delivered without assistance; but of the 12 face to pubes cases, 4 were delivered by the crotchet; for reasons, however, not depending on the position. Drs. M'Clintock and Hardy record 14 face presentations, and 15 face to pubes, all delivered without assistance, the labours in one case only of each description exceeding eighteen hours' duration; 10 of the former, and 12 of the latter, being under twelve hours. Of head and arm cases Dr. Collins makes no special mention, though cases are incidentally alluded to in his Report; Drs. M'Clintock and Hardy mention 8, all delivered naturally, the labours of 3 being under six hours; 3 between six and twelve hours; and 2 between twelve and eighteen. Dr. Churchill represents these cases as being of very rare occurrence—only 3 in 75,903 deliveries; yet in these two Reports we have 24 head and arm presentations in 19,482 deliveries.

Of breech presentations the authors have recorded 309, of which 51 occurred in twin labours, and 258 with single children. Of these latter, 174 were born alive, and 84 dead, of whom 56 were putrid, leaving 32 as the number lost, probably in consequence of labour, that is, 1 in 8; or, including the putrid, 1 in 3. Of all the children born with breech presentation which were lost, Dr. Churchill's estimate, from all the cases he collected is 1 in $3\frac{1}{2}$. We shall only further notice in connexion with this class of labour, that in some instances respiration was observed to take place while the head was still in the vagina, and in keeping the chin down on the thorax due regard was had to admit air to the mouth, in which the forefinger of the operator had been placed. This was accomplished by means of retaining in a direction backwards as much as possible the then unpressed perineum, with the back of the hand so engaged. This measure, however, could not be relied on. In one case the metallic tube invented by Mr. Roberton of Manchester, for favouring respiration when there was delay

in extracting the head, was tried; the authors say it was of decided utility, and they assert that but for it the child would have been lost.

In 181 instances the child presented with the feet, 53 of which were twin cases, and 1 was a triplet. Of the 127 single cases, there were 68 living children born, and 59 dead, of whom 39 were putrid, leaving 20 as having been lost in delivery, that is, 1 in 6; or, including the putrid, about 1 in $2\frac{1}{6}$; Dr. Churchill's statistics indicate 1 in $2\frac{1}{2}$, as the proportion lost in such cases. In 60 labours, 18 of which were twin cases, some part of the upper extremity presented. Of the 42 single cases 10 were primiparæ, and 32 had children previously. In 7 of the primiparæ, delivery was by version, 2 by evisceration, and 1 at the sixth month was expelled by the efforts of nature. In one of the version cases delivery had to be completed by the crotchet, but 1 of these 10 mothers died, and that was from ulceration of the intestine; 8 of the children were dead, 2 of them having been putrid; 32 of the mothers who had previously borne children gave birth to 12 living children, and in 20 to dead ones, of whom 11 were also putrid. The mortality of the children was much increased in consequence of the late period at which the mothers came into the Hospital. Taking all the cases, 42 in number, but 14 children were born alive, that is, 1 in 3. Version was performed in the 42 single cases 25 times; evisceration, 8 times; in 2 cases fœtal evolution occurred, 1 being a male at the sixth month, dead and putrid; the other a female, at the seventh, also dead. The child was expelled by the natural efforts, doubled up, not by evolution, in seven cases, all of them at about the sixth month of gestation.

We come now to what seems to us the most important part of this Report, viz., that which treats of "Difficult labour." The authors have divided this class of labours into two sections:—1st, "Tedious," exceeding twenty-four hours, but completed without assistance, the head being the presenting part; and, 2nd, "Instrumental," being those in which instrumental aid is demanded irrespective of time, which is subdivided into forceps and crotchet cases, the vectis having been used but once during the seven years, and that in a twin case. In the tedious labours, the delay arose in the first or second stage; when occurring in the third, the case is recorded under another head. The delay often occurred in the first stage only, or chiefly, but not unfrequently in both. Of course, when in the first only, it was not regarded as of as much importance as in the second, still there was not attached to it that "immunity from danger accorded

by some practitioners." No case of cartilaginous os uteri, or of disease of the uterine cervical tissue, rendering dilatation impossible, was met with, nor do the authors seem to have ever found it necessary to resort to incisions into the cervix. In some cases of rigidity the tepid water douche of Kiwisch, administered by means of the double cylinder hand syringe invented by Dr. Sinclair, was tried, but as a sufficient opportunity of testing it fully did not occur, no opinion as to its efficacy is given.

Delay in the second stage was found to arise in some cases from inertia, sometimes traced to nervous irritability, or to over-distention of the bladder; in one instance to an enormous distention of the bowels from flatus, and occasionally to thinness of the abdominal muscles allowing of anteversion. In other instances it arose from rigidity of the soft parts, an extremely muscular condition of the interior of the pelvis, and from bands in the vagina. Ergot was given in that form of inertia when it appeared that all that was required to complete the delivery was strong action. It was given while the head was within reach of the forceps, so that at any time, should the fœtal heart have become affected, the child could be saved by that instrument.

Altogether there were 247 cases of "tedious labour;" the delay being in the first stage in 91, in the second in 68, and in both in 88. Of the offspring, 198 were born alive, and 89 dead. Twelve of the mothers died—5 of peritonitis, 1 of peritonitis with metritis, 1 of peritonitis and phlebitis, and 1 of peritonitis and sloughing; 2 died of inflammation and sloughing, 1 of perforating ulcer of the stomach, and 1 from post-partum hemorrhage.

Under the second section of "difficult" labours, viz., the "instrumental," we find recorded 200 forceps cases, and 130 of craniotomy, the vectis having been used but once in the Hospital, and that in a twin case. Before following the authors into the consideration of these, it will be convenient to draw attention here to the statistics of their operations in general. The entire number we find to have been, in the seven years, 436; of these, 51 were in twin labours, being 19 of version, 29 by the forceps and vectis, 2 of craniotomy, and 1 of evisceration. Deducting the 233 plural deliveries, and their corresponding operations, we have 385 operations in 13,515 single deliveries, about 1 operation in 35 labours. Of the children the subjects of the operations in single labours, there were 29 stillborn in forceps cases, 2 of which were putrid; 17 in versions, 2 also being putrid; 130

from craniotomy; and 8 from evisceration,—a total of 184, or at the rate of 48 per cent. of the operations.

Of the mothers, 46 died, being at the rate of 12 per cent. If our readers compare these numbers with those compiled by Dr. Simpson from the Reports of the hospitals of Vienna, Paris, and Dublin, it will be seen that the operations have been more frequent in the cases embodied in this present Report than in any of the others; that the mortality of the mothers has been more than one-third less than in the previous Reports of the Dublin Hospital, but still higher than in either Vienna or Paris, and that the mortality of the children has been less than in any of the others, except in Vienna under Böer. The facts collected by Dr. Simpson have been thrown by the editors of his works into a tabular form, which we copy here, adding, for the convenience of comparison, the numbers we have culled from Drs. Sinclair and Johnston. It does not appear whether the items in this table refer to single labours only, or whether plural births are included; but if in the present instance we include these latter, it does not make any material difference. It will in that case appear, that of 13,933 children born, 436 were the subjects of operation, or 1 in 32. Of the children operated on, 43 per cent. would be lost, and of the mothers, 11 per cent.

		Proportion of operative cases to deliveries.	Per-centage of Infants lost in operation.	Per-centage of Mothers lost in operations.
Vienna,	Böer,	1 in 55	47 in 100	6 in 100
	Arneth,	1 in 69	34 in 100	12 in 100
Paris,	Boivin,	1 in 61	28 in 100	,, ,,
,,	Lachapelle:—			
,,	1800 to 1810,	1 in 57	36 in 100	,, ,,
,,	1810 to 1820,	1 in 82		
Dublin,	Collins,	1 in 86	77 in 100	25 in 100
,,	M'Clintock and Hardy,	1 in 52	76 in 100	22 in 100
,,	Sinclair and Johnston,	1 in 35½	48 in 100	12 in 100

The figures referring to the Dublin Hospital, in this table, exhibit a very satisfactory progress as to the safety of both mothers and infants in operative cases. The great frequency of operations as to the total deliveries arises, in a great measure, from recourse having been had to the forceps at an early stage in the class of "difficult" labours; and that most favourable results to the mother and offspring arose from this promptitude in affording assistance, must be evident to all.

The distribution of these 436 operations, and their results, were as follows:—

		Per-centage of Mothers lost in operative cases.	Per-centage of Children lost in operation.
		Per cent.	Per cent.
Forceps, ...	229	5·6	16
Craniotomy, . . .	122	20·4	100
Versions, ...	66	12·1	29
Eviscerations, . .	9	22·2	100

Interesting as such statistics as these are, from the fact of their showing both the relative and absolute frequency of operations, they cannot be depended on as indicating the value of any particular kind of operation, or the mortality of mothers or children consequent on it. To obtain information on these points, it is necessary to examine separately each class of cases, for which the operations are intended. We shall now proceed to examine with this view the class of tedious and difficult labours, comparing the directions given for their treatment in the three Reports of the Hospital last published, or rather the directions given as to the use of the forceps, the only or the chief point on which there is any difference, and the results obtained by each mode of practice.

On referring to Dr. Collins' Report, it will be seen that he limits the use of the forceps in tedious and difficult labour to cases where the child is known to be alive, the os uteri fully dilated, the soft parts relaxed, and the head so low in the pelvis as to bring the ear within reach of the finger. When the ear cannot be reached with the finger, the only means of effecting delivery is, he says, by lessening the head; and he asserts that if the patient has been properly treated from the commencement of the labour, there will be no symptoms in the mother requiring this operation till after the death of the child.

During the period for which Drs. M'Clintock and Hardy reported the practice of the Hospital, the conditions that were considered indispensable in order to render the forceps applicable, and without which they were not used, were:—

1st. That the child should be alive, or at least that there should not be any grounds for supposing it to be dead.

2nd. That the head had remained stationary within reach of the forceps for six hours at least, but this was not rigidly adhered to; as, for instance, under the existence of any pressing complication, as hemorrhage, convulsions, &c.

3rd. That the ear could be felt without force or violence.

4th. That there be no undue heat, dryness, tumefaction, or morbid sensibility of the mother's soft parts. The reporters assert that in the vast majority of instances the death of the child can be positively ascertained by the aid of the stethoscope; that in all the perforations for difficult labour recorded, the numbers in which they were not assured of the child's death, before undertaking the operation, did not exceed three. And it appears that, the child being dead, it was not the practice of the hospital to wait for the full development of bad symptoms before operating, but it was usual to wait some hours after the fœtal heart had ceased to be heard.

On comparing these rules of practice with those laid down in the Report of Drs. Sinclair and Johnston, very important differences will be observed. In the first place, time was never so much taken into consideration, in determining on the application of the forceps, as the state of the mother and child; secondly, the development of absolutely bad symptoms was not waited for; the practice being to cut short the labour where there was reason to apprehend their advent; and, in the third place, it was not thought necessary to feel the ear.

In cases of inertia in the second stage, the head having entered the brim, ergot was given and the fœtal heart watched, and if its action was found to fail, the forceps were used promptly. When the heart had never been heard, it was presumed the child was alive, and if, after the administration of ergot, the progress of the head was not sufficient, assistance was given. In powerless labour, when ergot and stimulating enemata failed to excite uterine action, the delivery was completed by the forceps. But in powerless labour, with the head pressing on the perineum, delivery was at once effected, without waiting for the ergot. In cases of disproportion depending on the head, or where the head was misplaced, should symptoms of impending rupture appear, or should the pulse rise above 100, and the tongue become dry, the progress of the head was deemed of no account, and interference was considered to be demanded. In all cases of pelvic narrowing, when the head could be seized, and there was no positive proof of the child's death, the forceps were tried before resorting to the perforator and crotchet; by following this practice children, which at first it had not been expected could have been preserved, have in many cases been saved, and with perfect impunity to the mother.

The knowledge that patients had been delivered before with the forceps had due weight in determining their subsequent use,

but they were not always required in such cases. When vomiting occurred, after the head had been well in the pelvis, even though there were no other bad symptoms, or where there was delirium at this stage, or where the patient was much exhausted by the duration or severity of her labour, or where a labial thrombus was observed to be commencing to form, recourse was had to the forceps.

Delivery was completed by their aid, as a general rule, while the patient was under the full influence of chloroform; but this was sometimes dispensed with, and the attempt to put them on, when she was only partially under its influence, was found difficult and dangerous.

The position in which they were first attempted to be applied was obliquely lateral; should this fail, or delivery not be completed, they were withdrawn, and tried in the antero-posterior position; and, this failing, were again tried in the former, the child being often saved, and with impunity to the mother, in consequence of the perseverance. It was not thought necessary to feel the ear, and it was seldom sought for. Frequently it could not have been reached, as the instrument was often used when the head was not half way through the pelvis, or had scarcely entered the brim.

We find that the forceps were used, exclusive of twins, in 200 cases, that is, 1 in $67\frac{1}{2}$. According to Dr. Churchill's statistics, British practice affords 1 forceps case in $342\frac{1}{10}$ deliveries; French, 1 in 140; and German, 1 in 159; the average of the three being 1 in $176\frac{1}{3}$.

Of the 200 cases, 32 were complex labours, and 168 were for difficult labour. Of the offspring of the latter, 20 were born dead, being 1 in $8\frac{2}{3}$; the average, according to Dr. Churchill, being 1 in $4\frac{1}{3}$; and of the mothers, 6 died, being 1 in 28. But 3 of these died from truly accidental causes,—scarlatina, pneumonia, and mental anxiety, and should be excluded; reducing the proportion to 1 in 56. Including the complex labours, there were 11 deaths out of the entire 200 forceps cases, being 1 in $18\frac{2}{11}$; the proportion in British practice being 1 in $20\frac{3}{4}$; and in French and German, 1 in $14\frac{3}{4}$: the average 1 in $16\frac{1}{2}$.

Our present object is, however, rather with the comparative results of the modes of practice, of which we have given a sketch, as being recommended in the three Reports. For arriving at these, the two last published afford considerable facilities; but that of Dr. Collins does not go so fully into the details; we have, therefore, often been obliged to arrive at the particulars by comparing the several parts of the Report. This

we have done with as much accuracy as possible, and now submit the facts we have ascertained, again reducing the numbers to the uniform standard of 100,000, for the convenience of comparison, which is necessary, in consequence of the great difference in the number of cases recorded in each.

Dr. Collins noted the duration of labour in 15,850 cases, of which 264 exceeded 24 hours: taking these as tedious and difficult cases, as has been done by Dr. Simpson, Dr. Churchill, and others, we have such cases occurring at the rate of 1694 in 100,000 deliveries. Drs. M'Clintock and Hardy met with labours of this class more frequently, viz., at the rate of 3904; the experience of Drs. Sinclair and Johnston being nearly the same, viz., 3738 in 100,000 deliveries. Dr. Collins allowed two-thirds of his cases to be delivered without assistance; or, to be exact, at the rate of 64,772 in 100,000 such. Drs. M'Clintock and Hardy report their cases as being delivered naturally, at nearly the same rate, viz., 66,795; and Drs. Sinclair and Johnston at the rate of 48,054 only. In Dr. Collins' difficult cases he used the forceps in 14 only, being at the rate of 5303 in 100,000. Drs. M'Clintock and Hardy report 18 forceps, and 16 vectis operations in their cases, being a total of 13,127 in 100,000: and Drs. Sinclair and Johnston report the forceps as having been used 168 times, being at the rate of 32,684; but Dr. Collins performed craniotomy at the rate of 29,924 times in his cases; and Drs. M'Clintock and Hardy at the rate of 20,077; and Drs. Sinclair and Johnston, 19,260 times.

The maternal mortality in the whole class of difficult cases with Dr. Collins was at the rate of 11,742; with Drs. M'Clintock and Hardy, 8494; and with Drs. Sinclair and Johnston, it was 6031, or little more than one half of Dr. Collins'. Of the entire tedious and difficult cases that were allowed to be delivered without assistance, the maternal mortality with Dr. Collins was at the rate of 7017; with Drs. M'Clintock and Hardy, 5202; and with Drs. Sinclair and Johnston, 4856; being little more than half of Dr. Collins'. With Dr. Collins, the mothers delivered with the forceps for difficult and tedious labours died at the rate of 28,571 in 100,000 operations; with Drs. M'Clintock and Hardy, 14,705; and with Drs. Sinclair and Johnston, 3571 only, being less than one-eighth of Dr. Collins' mortality, and one-fourth of the other. Of craniotomy cases, the maternal mortality with Dr. Collins was at the rate of 18,987; with Drs. M'Clintock and Hardy it was 15,384; and with Drs. Sinclair and Johnston, 13,131; little more than two-thirds of the mortality of Dr. Collins'.

The results to the children are also very favourable in the

recent Report. We find that 113 of Dr. Collins' 264 tedious and difficult cases gave birth to still-born children, being at the rate of 42,803 in 100,000. Of the 259 cases reported by Drs. M'Clintock and Hardy, 120 children were still-born, being 46,332 in 100,000; and of the 514 of Drs. Sinclair and Johnston, 168, being at the rate of 32,684. Dividing these into the three classes, as we have done in speaking of the mothers, it appears that of 171 tedious and difficult cases delivered without assistance, under Dr. Collins' care, 29 gave birth to still-born children, being at the rate of 16,959 in 100,000 such cases left to nature; but it is to be observed with regard to these numbers, that though we have taken pains to make them as nearly true as possible, they cannot be as absolutely relied on as the others, Dr. Collins' Report not being explicit on the subject. Of the 173 similar cases in Drs. M'Clintock and Hardy's Report, 52 children were still-born, being at the rate of 30,057; and in Drs. Sinclair and Johnston's 247 cases there were 49 still-born children, being at the rate of 19,838. On careful examination, however, good reason will be found for attributing this high mortality in the two last Reports to the use of ergot of rye in these cases, a drug that Dr. Collins makes no mention of having ever used; Drs. M'Clintock and Hardy mention that in 30 of the 173 unassisted cases it was administered, and that though in nearly every one of these there was evidence, at the time, of the child's vitality, yet 20 were still-born. Deducting these as having been killed by the ergot, the infantile mortality in unassisted, tedious, and difficult cases will be reduced to 18,497; and in the same way 6 should be deducted from Drs. Sinclair and Johnston's numbers, as being also probably attributable to the ergot, reducing their proportion to 17,408.

Of Dr. Collins' 14 tedious and difficult cases delivered by the forceps, there were 5 children born dead, being 35,714 in 100,000 forceps operations. In Drs. M'Clintock and Hardy's forceps and vectis cases combined, the proportion of children still-born was 50,000; and in Drs. Sinclair and Johnston's 11,904, being one-third of the deaths met with by Dr. Collins and less than one-fourth of the proportion recorded by Drs. M'Clintock and Hardy.

The facts that we have collected on this subject from the three Reports are arranged in the following table, exhibiting at a glance the results just mentioned. The diminution in the mortality recorded in the authors' Report, of the mothers who had been the subjects of operation, is much more marked in the forceps cases than in those where the perforator was used.

COMPARATIVE STATISTICS OF TEDIOUS AND DIFFICULT LABOURS RECORDED IN THREE REPORTS OF THE DUBLIN LYING-IN HOSPITAL.

	COLLINS.		M'CLINTOCK AND HARDY.		SINCLAIR AND JOHNSTON.		TITLE OF STANDARD.
	Actual numbers in 15,580 deliveries.	Reduced to uniform standard of 100,000.	Actual numbers in 6634 deliveries.	Reduced to uniform standard of 100,000.	Actual numbers in 13,748 deliveries.	Reduced to uniform standard of 100,000.	
Total number of tedious and difficult labours, ...	264	= 1694	259	= 3904	514	= 3738	In 100,000 deliveries.
Of which there were delivered without assistance,	171	= 64772	173	= 66795	247	= 48054	In 100,000 tedious and difficult labours.
Ditto, by forceps or vectis,	14	= 5303	34	= 13127	168	= 32684	Ditto, ditto.
Ditto, by perforator, . .	79	= 29924	52	= 20077	99	= 19260	Ditto, ditto.
Deaths of mothers:—							
Total, after tedious and difficult labours, ...	31	= 11742	22	= 8494	31	= 6031	Ditto, ditto.
Of whom had been delivered without assistance, . . .	12	= 7017	9	= 5202	12	= 4856	In 100,000 tedious and difficult labours, unassisted.
Ditto, by forceps or vectis.	4	= 28571	5	= 14705	6	= 3571	Ditto, by forceps.
Ditto, by perforator, . .	15	= 18987	8	= 15384	13	= 13131	Ditto, by perforator.
Deaths of children:—							
Total still-born after tedious and difficult labours, ...	113	= 42803	120	= 46332	168	= 32684	In 100,000 tedious and difficult labours.
Of whom had been delivered without assistance, . .	29	= 16959	52	= 30057	49	= 19838	Ditto, unassisted.
Ditto, by forceps or vectis,	5	= 35714	17	= 50000	20	= 11904	Ditto, by forceps.
Ditto, by perforator, . .	79	= 100000	52	= 100000	99	= 100000	Ditto, by perforator.

Table to be read thus:—Dr. Collins met with 264 tedious and difficult labours in 15,580 deliveries, which is equal to 1694 in 100,000; and of the 264 he allowed 171 to be delivered without assistance, which is equal to 64,772 in 100,000 tedious and difficult cases, &c. &c. Again, 31 of the 264 mothers died, which is equal to 11,742 in 100,000 tedious and difficult labours. 12 of the 31 who died had been delivered without assistance, which is equal to 7017 deaths in 100,000 tedious and difficult labours allowed to be completed without assistance, &c. &c.

N. B.—It is to be observed, that the items in Dr. Collins' Report are not specifically set forth; we have consequently been obliged to arrive at some of them by inference, founded on other parts of the book. The infantile mortality in tedious and difficult labours completed without instrumental assistance was, in Drs. M'Clintock and Hardy's cases, greatly increased by the use of ergot of rye. 20 of the deaths were evidently due to this cause; deducting these, the proportion is reduced to 17,919; Drs. Sinclair and Johnston's number should also be reduced by 6, in which ergot was given, making the proportion 17,408.

This is doubtless due to the earlier period at which the operation was undertaken: thus it appears that the average duration of the entire of the forceps and vectis cases reported by Drs. M'Clintock and Hardy was 34 hours, and that, of the cases in which the mothers died after these operations, it was 44 hours; whereas the average length of the forceps cases in Drs. Sinclair and Johnston's Report was 29½ hours only, and that of their fatal ones was 36 hours. And it further appears that the average duration of the craniotomy cases in both these Reports was nearly equal to that of the fatal forceps cases respectively—Drs. M'Clintock and Hardy's cases averaging 42 hours, and the fatal ones 47; and the authors', 37 hours, and the fatal ones 36. Dr. Simpson has shown from the data in Dr. Collins' Report, that in the entire number of cases whose duration was noted, the deaths of the mothers were at the rate of 1 in 6 of those whose labours exceeded 36 hours. We cannot then fairly attribute the high mortality of the craniotomy cases to the operation, seeing that it is, in both of these latter Reports, above this average, viz., 1 in 7. Dr. Simpson has also shown from the same data that the probable number of deaths in the entire labours, having a duration of from 24 to 36 hours, is one in 17; and we have seen in the last two Reports that in one where the average duration of the labour before using the forceps, was 34 hours, the mortality of the mothers was 1 in 7, being about what might be expected at between 34 and 36 hours; and in the other, where the labour was not allowed to go on beyond 29½ hours, the mortality was only 1 in 28, showing a great saving of maternal life in consequence of the early use of this instrument.

There are no questions in the practice of midwifery more difficult or more important than those that arise with respect to the use and choice of instruments, and though there has been much controversy on the subject, this is perhaps the first time that an opportunity has occurred for bringing the disputed points to a practical test; we will therefore, we hope, be excused for the length at which we have dwelt on the subject. To those who have, like ourselves, been in the habit, as has long been the established practice in the hospital with which we are connected, of making free use of the forceps, such results as we have now detailed must be most encouraging.

To us also it is a source of much pride that in the pages of this Journal first appeared the essays of Dr. Churchill, the present learned Professor of Midwifery in our University, which, along with those of the late Dr. John Beatty, published in our immediate predecessor, the Dublin Medical Transactions; and

those of Dr. Thomas Beatty, published with Dr. Churchill's in our first series, exercised such important influence in drawing the attention of the Dublin School to the true merits of this instrument, and led to the establishment of a mode of practice whereby the operation of craniotomy, at all times a terrible one, has been rendered less frequent in tedious and difficult labours by nearly 11 per cent.; the mortality of mothers the subjects of such labours has been reduced to one-half; and the mortality of the offspring lowered by more than 10 per cent. To all, it must be most gratifying to find that such progress is being made in obstetric art and manipulative skill, a progress bringing such increased safety to both mother and child; but we cannot forbear remarking on the strange circumstance that, in the face of all this, the obstetric profession has lately been made the subject of much vituperation, and have had not a little of the "odium theologicum" heaped upon them for their low "morality" displayed, it is said, in their fondness for craniotomy. Stranger still, Dr. Churchill, who has taken such a leading part in the advocacy of the forceps, has been in a measure singled out for special condemnation for his "child-murdering" predilections!

We now leave this part of the Report, of which, if we have not grievously failed in our purpose, we have said enough to make our readers anxious to study it for themselves, and we have no doubt but that those who do so will agree in pronouncing it one of the most important contributions that has been ever made to practical midwifery, and one that will afford material for thought so long as obstetric science is cultivated Our limited space will oblige us to glance but very hastily at the remainder of the book; but, before leaving this chapter, we must be allowed to draw particular attention to the directions given as to the method of making traction with the forceps, namely, that it should be done during or in imitation of a pain, and only in one direction, that of the curve of the axis of the pelvis, *lateral motion* of any kind, such as *see-sawing* or *twisting* the grasped presentation, being never permitted. We must also beg to express our full concurrence in the axiom, "that, in doubtful cases where their application is easy, the error was on the right side to complete the delivery by their aid."

Part the fourth of the Report treats of anomalous labours, opening with plural births: of these there were 233 cases of twins, and one of triplets, from which it appears that Ireland is even exceeding herself in being prolific. Dr. Collins tells us that in France the proportion of twins is 1 in every 95 births; in Germany, 1 in 80; in England, 1 in 92; in Scotland, 1 in 95;

and in Ireland, 1 in 62; but during the seven years embraced in this Report, notwithstanding that they began so soon after the famine, the proportion was 1 in 58.

There are very many interesting facts recorded as to the progress of these cases, but, unfortunately, no account of the interval that was found to elapse between the births of the children, thereby depriving us of the power of comparing the results of the peculiar mode of practice adopted, to which we have already alluded in speaking of the management of the third stage of natural labour. This peculiarity consists, as we have already explained, in holding the uterus with the hand during the interval, instead of applying a binder, as is usually done, and as is recommended in the other Reports. The prime object of this treatment, it is said, is to have as short an interval as possible. Judging from the entire duration of the labours, our only means in the absence of a precise knowledge of the length of the intervals, the plan adopted must be very inferior to that of applying the binder, for we find that the average duration of the labours was 11 hours, whereas in Dr. Collins' Report it was only 6 hours and 40 minutes, and in that of Drs. M'Clintock and Hardy, 7 hours and 49 minutes. In 29 instances out of the 233 was the second child, though presenting with the head, subjected to operation, that is, in 12 per cent. of the 233 cases. In Dr. Collins' Report we only find 4 operations under the same circumstances, that is, $1\frac{2}{3}$ per cent. of the entire number; and in Drs. M'Clintock and Hardy's 95 cases there seems to be but one in which an operation was necessary to deliver the second child, the head presenting. Judging from these facts, we see no great reason, either, to give up the use of the binder. On the other hand, there seems to have been less hemorrhage in Drs. Sinclair and Johnston's cases than in those of either of the other reporters.

In 33 instances it is said there was but one placenta for the two children: this is a point of considerable physiological interest. A similar statement is made in Drs. M'Clintock and Hardy's Report, and the fact is very generally believed, but in all the cases of the kind that we have had an opportunity of examining, we have been able to satisfy ourselves that there were really two distinct placentæ, though closely united, and we have reason to know that some of our most expert operators have always failed in attempts to cause injection to pass from one placenta to the other.

The next form of anomalous labours considered by the authors is that in which prolapse of the funis took place. This accident occurred 98 times. In 23 of these cases the cord was

pulseless when the patient was admitted, or when the prolapse was discovered; of the remaining 75, we find that 44 gave birth to living children, being at the rate of 58¾ per cent. On comparing this with the cases recorded in the other Reports, it will be seen that a great increase of safety to the child has been obtained. In Drs. M'Clintock and Hardy's Report, after deducting the premature, putrid, and pulseless cases, there are 26 cases of prolapse in which birth was given to 12 living children, being at the rate of 46 per cent, and in Dr. Collins', after making similar deductions, the per-centage of living children is only 36.

Of the mothers, our authors report 3 as having died,—one from peritonitis and sloughing of the vagina, after craniotomy, the waters having escaped 48 hours before she came into the Hospital; of the others, one was in the last stage of phthisis when delivered, but lingered to the twenty-first day; and one died from acute bronchitis, under which she was suffering when admitted. Both of these were delivered naturally, and it is to be observed that the other was delivered by craniotomy.

Of Drs. M'Clintock and Hardy's cases, one mother died from the effects of hemorrhage before delivery; and of Dr. Collins' cases he says:—"None of the mothers sustained any injury in the delivery"—an expression that would we believe be equally true in reference to the cases in both of the other Reports.

The mode of practice pursued in these cases will be seen from the following statement:—

MODE OF DELIVERY IN CASES OF PROLAPSE OF THE FUNIS.

	Natural.	Cord replaced, and Child born living.	Forceps.	Version.	Craniotomy.	Evisceration.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Sinclair and Johnston,	58	3	9	16	12	1
M'Clintock and Hardy,	62	13½	3	8	11	0
Collins, ...	75	5	1	4	14½	0

From this it appears that Drs. M'Clintock and Hardy have had most success in replacing the cord, and in their Report they give a minute description of the process by which this was accomplished. Our authors describe a very similar method as having been followed in the cases reported by them, but without an equal measure of success. Dr. Collins tried several methods of replacing the prolapsed part, and, when he succeeded, introduced a sponge to retain it in its place. With re-

gard to the cases in which version was performed, it is to be observed that the authors report this operation as having been performed 14 times where the presentation was natural, and that 12 of the children were born alive. In one case delivery had to be completed by perforation, on account of narrowing of the pelvis, and in another the child was lost in consequence of delay in extraction, caused by the hand and arm being engaged behind the head. The mothers in all these version cases, made good recoveries, and left the Hospital on the eighth day, except one in whom a labial thrombus formed, which retarded her recovery, keeping her six weeks in the Hospital.

During the periods embraced in the other two Reports there were no cases of version in cases where the head presented, the operation being considered too perilous to the mother to be attempted on the small chance it was thought to afford of saving the child. The increased safety to the child reported by the authors is evidently due in a great measure to these version cases, the result of which to the mothers has left nothing to be regretted, or to prevent the practice being generally adopted.

Accidental and unavoidable hemorrhages are next considered by the authors, but though their remarks on these are most excellent, we must pass them over. The next form of anomalous labour treated of is that where convulsions occurred. Of these cases more than the average were met with, the proportion being 1 in 218 deliveries, the numbers in the other Reports being 1 in 510 in M'Clintock and Hardy's, and in Dr. Collins', 1 in 547. According to Dr. Churchill, the average of all observers is 1 in $693\frac{3}{4}$ only. The explanation of this is, probably, that many cases were brought to the Hospital after convulsions had set in, and that many did not comply with the rule of the house as to presenting themselves at the dispensary before their labours began, as due attention appears to have been paid to the premonitory symptoms when the opportunity was permitted. All these cases of convulsions are detailed, and with sufficient minuteness to be of great value to future inquirers, but we must express our belief that the subject has not been fully thought out by our authors, as is indicated by their stating that all convulsions are either hysterical or apoplectic in their nature, a doctrine that their own cases would sufficiently refute.

We next come to labours anomalous from rupture of the uterus or vagina. It will afford great pleasure to all to perceive the small proportion of these cases met with; a fact, no doubt, due to the early assistance given in difficult cases.

The entire number met with was only 17 in 13,748 deliveries, being 1 in 808; in M'Clintock and Hardy's Report the proportion is 1 in 707, and in Collins', 1 in 482¾. Of the 17 cases, the rupture had occurred in 7 before the patients were admitted to the hospital, the proportion occurring in Hospital thus was 1 in 1374 only. Making a similar allowance in the other cases, the proportion in M'Clintock and Hardy's Report is, 1 in 1327, and in Dr. Collins's, 1 in 529—results showing an improvement, not only in the hospital practice, but in the extern also.

Our space will not permit us to notice the remaining sections of this fourth part of the work, and indeed a few only of those included in the fifth part, which treats of miscellaneous subjects, and concludes the book. Of this part, the first and second chapters are devoted to post-partum and secondary hemorrhage, and then we have one on the induction of premature labour, of which operation six cases are given, but as the principal of these have already appeared in our pages among the proceedings of the Obstetric Society, it is not necessary to dwell on them. In all the cases the water-douche of Kiwisch was the means employed to bring on the labour; and for its application the instrument invented by Dr. Sinclair was found most convenient.

Chapter IX. of this part is devoted to the consideration of the use of ergot before delivery. Altogether, this drug was administered before delivery to 109 patients, who gave birth to 113 children, of whom 12 were dead-born. These cases the authors divide into four groups. The first consists of 18 cases, in which the child was born within three-quarters of an hour after the first dose of ergot; of these, there were 16 living children born, and 2 dead, that is, 1 in 9; but delivery required to be completed with the forceps in 7 instances.

The second group consists of 44 cases in which delivery was completed within an hour; of these there were 41 living and 5 dead children born, being rather more than 1 in 9. Of the labours, 28 required to be completed with the forceps. The third group consists of 30 cases, in which the child was born in from one to two hours after the first dose of ergot; of these there were 27 living and 4 dead children born, being 1 in 8 nearly; but 20 of the labours required to be completed with the forceps. The fourth group consists of 17 cases, in which from three to eighteen hours elapsed before the birth of the child; 11 of these were complete within four hours, and only 1 ran on to eighteen hours. Of the children, 17 were born alive, and 1 dead, and 6 of the labours were completed by the forceps.

Of the 109 cases, in 61 the labour was completed by the forceps, a circumstance to which the low mortality of the children must be attributed. We have already observed that in 30 cases in which the drug is reported to have been used by Drs. M'Clintock and Hardy, 10 of the children only were born alive, though they were known to be alive when the medicine was given.

Dr. Collins does not seem to have used the medicine at all before delivery in his cases, nor do we ever, except under peculiar circumstances, in the hospital with which we are ourselves connected.

The next chapter is concerning the use of chloroform: it is so short, and of such practical importance, that, if we had space, we would extract it at length. We must, however, refer inquirers to the book itself, observing, in passing, that in natural labour anæsthesia was not pushed to its full extent, but in all operations, unless there was some contra-indication or some objection on the part of the patient, complete insensibility was produced. In 313 cases the chloroform was used to this extent, in none of which did any untoward accident occur, though in some cases it was found necessary to discontinue the inhalation. In 5 out of the 313 cases, hemorrhage after delivery took place, 1 being after the birth of twins, but in none was it difficult to restrain.

Chapter XI. is on puerperal fever; in it we have only the cases which recovered considered, but we have a table with the particulars of all the cases, and references to the pages at which they are to be found, which in some measure compensates for their being scattered through the book according to the several classes of labour after which they occurred.

If, where there is so much that is excellent, we could permit ourselves to find fault, it would be with the manner in which the subject of puerperal fever has been handled. Suffice it to say that, like the pathology of convulsions, the matter has not been thought out; it is true, that the object has evidently been to allow the facts to speak for themselves, and that with this view the details are very fully given; but a pathology that allows puerperal fever and peritonitis to be constantly used as equivalent terms could not be passed over in silence here. Before quitting this subject, we must notice a remarkable fact mentioned by Dr. Collins, to which, strange to say, there is no allusion in either of the subsequent Reports. The fact to which we allude is, that during the last four years of his Mastership there was not a single death from puerperal fever, though there were 10,785 patients delivered in the Hospital. Dr. Collins

attributes this to the system of chlorine fumigation, ventilation, and stoving of the bedclothes, that he adopted; we have, however, good reason to believe, that the same system has been fully carried out by his successors; and if so, the fact can only be regarded as one of those of such frequent occurrence in medicine that would tempt even the most cautious into a hasty inference. At all events, we cannot but regret that a statement so hopeful and encouraging should not have met with the notice it deserved. The remaining chapters are on phlegmasia and phlebitis; on children dying in the Hospital; and on sloughing of the vagina and labia; and the book closes with a very complete and copious index, compiled by Dr. Minchin, which adds not a little to the usefulness of the whole.

We cannot take our leave of this treatise without again expressing our admiration of the care with which the facts were collected. Here was no spasmodic effort, but the calm, steady, and patient work of seven years. We would be glad if our authors had told us how it was accomplished. Organized and superintended by Dr. Shekleton it must have been, as he alone was in office throughout the whole period; but in its performance each of his five assistants must have borne no mean share, and all may well be proud of its fulfilment. Nor is the manner in which the result of so much labour is put before the public unworthy of its object: the anxious care with which the facts have been arranged, tabulated, and compared, so as to bring all into due prominence, must ever reflect credit on the authors, and will without doubt serve to advance obstetric medicine, and uphold the honour of the Dublin School of Midwifery.

Koleran i Stockholm 1856, *och Smittkopporna derstädes* 1856–57. *Statistiska Rapporter;* af DR. C. G. GRÄHS. Ur Hygiea, April, 1858.

Cholera in Stockholm in 1856, *and Epidemic Small-pox in the same City in* 1856 *and* 1857. *Statistical Reports* by DR. C. G. GRÄHS. Reprinted from the Hygiea for April, 1858. pp. 15.

OUR indefatigable colleague, Dr. Grähs, keeps us *au courant* with the epidemics of the Swedish capital. We regret to find that the chronicling of the invasions of cholera has become an almost annual task; even in the present autumn, according to the last Report we have seen, namely, up to the 18th of September, the cases have been 511, the deaths 217.

In 1856 cholera made its appearance in Stockholm, in the commencement of July; during the preceding months there had been, from the end of January to the beginning of May, a considerable amount of illness, which diminished so steadily in June, that at the commencement of the following month the public health appeared to be in a highly satisfactory condition. Meteorological observations did not exhibit any great or unusual atmospheric peculiarities. The heat, the average of which was tolerably high during the months of June and July, did not at any time exceed 77° F., and the amount of rain was, likewise, in general very small, except in the month of May, when it amounted to 3·085 inches. The total number of cases of cholera was 185, of which 98 were fatal; the first case occurred on the 7th of July, the last, on the 28th of December; the last death took place on the 19th of the latter month.

Of the 185 persons attacked, 125 were males, and 60 females; of the 98 who died, 62 were males, and 36 females. The per-centage of mortality was, therefore, of males attacked, 49·6; of females, 60; and of the whole number of those who sickened, 52·9. The per-centage of the population which sickened was about 0·2, while the fatal cases were 0·1 per cent.; in other words, every 529th person in the capital was attacked with cholera, and every 999th person died of the disease. Dr. Grähs adduces several facts to show that the epidemic was on this occasion of spontaneous origin.

The particulars brought forward by Dr. Grähs in reference to the epidemic of small-pox, as it appeared in the years 1856 and 1857, are very important; we shall briefly allude to a few points.

It is shown, that during the entire course of 1855, only two persons affected with small-pox were under treatment in the temporary hospital in Stockholm, and that, after the 4th of July in that year, when the last of these patients was dismissed cured, no case occurred until the 3rd of June, 1856, on which day a fishmonger's assistant, aged thirty-two, vaccinated, was admitted into the hospital, labouring under the disease. He had the day before returned from a journey to Ånland, where, as he stated, he had not been in contact with any person in small-pox, but had been in a house in which, it seems, such a patient lay at the time.

From the date last mentioned to the 1st of January, 1857, 208 persons affected with small-pox were received into the temporary hospital, of whom 44 died; and from the 1st of January to the 31st of December, 1857, the number of patients

admitted was 938, while the number of deaths was 155. Taking into account those treated at the Sabbatsbergs Small-pox Hospital, it would appear that in the space of eighteen months, 1312 small-pox patients (795 males and 517 females), had been taken care of under temporary arrangements, and through the measures adopted in the emergency by the Corporation; and that, of these patients, 1096 recovered, and 216 died; the mortality, therefore, amounted to 16·4 per cent.

Dr. Grähs appends several tables which show that the mortality was highest under the age of five years, and that this great mortality was due to the large number of children who were not vaccinated. The next most fatal time was old age, or the advanced periods of life, the mortality was lowest between ten and twenty years of age.

The mortality of vaccinated patients amounted to 13·1 per cent.; of those whose vaccination was doubtful, to 34·7; and of those who were not vaccinated, to 42·5 per cent.

The most favourable result of all was afforded by those who had recently been re-vaccinated: of nine persons belonging to this category, who were treated at the Sabbatsbergs Small-pox Hospital, all recovered; and the author adds, that of 414 individuals re-vaccinated by him, in the months of February and March, 1857, only three took small-pox, of whom one died.

The value of Dr. Gräh's Reports is so evident as to render comment superfluous.

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S, Lecturer on Anatomy at St. George's Hospital. London: Parker and Son. 1858. Royal 8vo, pp. 750.

A Treatise on the Human Skeleton (*including the Joints*). By GEORGE MURRAY HUMPHRY, M. B. Cantab., F. R. C. S., &c., &c. Cambridge: Macmillan and Co. 1858. Royal 8vo, pp. 620.

IT would be quite impossible, consistently with the practical scope and object of this Journal, to offer anything like an analytical review of these works. They are both most important and valuable contributions to scientific anatomy, and prove that an increased attention is being bestowed on its study in England; for in the Scotch and Irish schools it has been justly always regarded as the true basis of medicine. This has, perhaps, arisen from the fact that, at least as regards the Dublin school, the facilities afforded to the student of medicine for dis-

section have been, as well under the old system as since the Anatomy Act became law, much greater than in London or in any of the English provincial towns; and we should be sorry indeed to recommend the first of the works we are about to notice did we think it was in any way intended by its author as a substitute for the dissecting-room.

Mr. Gray's book, in excellency of arrangement and completeness of execution, exceeds any work on anatomy hitherto published in the English language, affording a complete view of the structure of the human body, with especial reference to practical surgery. The sections into which it is divided are :— 1. Osteology, illustrated by 98 elaborate wood engravings; 2. Articulations, with 31 illustrations; 3. Muscles and fasciæ, 57 illustrations; 4. Arteries, 29 illustrations; 5. Veins, 11 illustrations; 6. Lymphatics, 6 illustrations; 7. Nervous system, 18 illustrations; 8. Cranial nerves, 12 illustrations; 9. Spinal nerves, 12 illustrations; 10. Organs of sense, 22 illustrations; 11. Organs of digestion and their appendages, 32 illustrations; 12. Organs of circulation, 3 illustrations; 13. Organs of voice and respiration, 8 illustrations; and 14. Urinary and generative organs, 25 illustrations.

Thus the volume constitutes a perfect book of reference for the practitioner, demanding a place in even the most limited library of the physician or surgeon, and a work of necessity for the student to fix in his mind what he has learned by the dissecting knife from the book of nature. In illustration of the author's style and the manner in which he has treated his subject, we shall make two selections: the first, the anatomical description of the supra-renal capsules; and the second, the surgical anatomy of the brachial artery :—

"The supra-renal capsules are usually classified, together with the spleen, thymus, and thyroid, under the head of 'ductless glands,' as they have no excretory duct. They are two small flattened glandular bodies of a yellowish colour, situated at the back part of the abdomen, behind the peritoneum, immediately in front of the upper end of either kidney; hence their name. The right one is somewhat triangular in shape, bearing a resemblance to a cocked hat; the left is more semilunar, and usually larger and higher than the right. They vary in size in different individuals, being sometimes so small as to be scarcely detected; at other times large. They measure from an inch and a quarter to nearly two inches in length, about an inch and a quarter in breadth, and from two to three lines in thickness. In weight they vary from one to two drachms.

"*Relations.* The anterior surface of the right supra-renal capsule is in relation with the under surface of the liver; that of the left, with the pancreas and spleen. The posterior surface rests upon the

crus of the diaphragm, opposite the tenth dorsal vertebra. Their upper thin convex border is directed upwards and inwards. Their lower thick concave border rests upon the upper end of the kidneys, to which they are connected by the common investing areolar tissue. Their inner borders are in relation with the great splanchnic nerves and semilunar ganglia, and lie in contact on the right side with the inferior vena cava, and on the left side with the aorta. The surface of the supra-renal gland is surrounded by areolar tissue containing much fat, and closely invested by a thin fibrous coat, which is difficult to remove, on account of the numerous fibrous and vascular processes which enter the organ through the furrows on its anterior surface and base.

"*Structure.*—On making a perpendicular section, the gland is seen to consist of two substances, external or cortical, and internal medullary.

"The cortical substance forms the chief part of the organ; it is of a deep yellow colour, and consists of narrow columnar masses placed perpendicularly to the surface.

"The medullary substance is soft, pulpy, and of a dark brown or black colour; hence the name, atrabiliary capsules, given to these organs. In its centre is often seen a space formed by the breaking down of its component parts.

"According to the researches of Oesterlen and Mr. Simon, the narrow columnar masses of which the cortical substance is composed measure about $\frac{1}{700}$th of an inch in diameter, and consist of small closed parallel tubes of limitary membrane containing dotted nuclei, together with much granular matter, oil globules, and nucleated cells. According to Ecker, the apparent tubular canals consist of rows of closed vesicles placed endwise, so as to resemble tubes; whilst Kölliker states that these vesicles are merely loculi or spaces in the stroma of the organ, having no limitary membrane, and, from being situated endwise, present the appearance of linear tubes. Nucleated cells exist in large numbers in the supra-renal glands of ruminants, but more sparingly in man and other animals, but the granular matter appears to form their chief constituent; their size varies, and they present the singular peculiarity of undergoing no change when acted upon by most chemical reagents. The columnar masses are surrounded by a close capillary network, which runs parallel with them.

"The medullary substance consists of nuclei and granular matter, uniformly scattered throughout a plexus of of minute veins.

"The arteries supplying the supra-renal glands are numerous and of large size; they are derived from the aorta, the phrenic, and the renal; they subdivide into numerous minute branches previous to entering the substance of the gland.

"The supra-renal vein returns the blood from the medullary venous plexus, and receives several branches from the cortical substance; it opens on the right side into the inferior vena cava, on the left side into the left renal vein.

"The lymphatics terminate in the lumbar glands.

"The nerves are exceedingly numerous; they are derived from the solar and renal plexuses, and, according to Bergmann, from the phrenic and pneumogastric nerves. They have numerous small ganglia developed upon them."

"*Surgical Anatomy of the Brachial Artery.*—Compression of the brachial artery is required in cases of amputation of the arm or fore-arm, in re-section of the elbow-joint, and the removal of tumours; and it will be observed, that it may be effected in almost any part of its course; if pressure is made in the upper part of the limb, it should be directed from within outwards, and if in the lower part, from before backwards, as the artery lies on the inner side of the humerus above, and in front of it below. The most favourable situation is either above or below the insertion of the Coraco-brachialis.

"The application of a ligature to the brachial artery may be required in cases of wounds of the vessel, or of aneurism of the brachial, the radial, ulnar, or interosseous arteries; and this vessel may be secured in any part of its course. The chief guides in determining its position are the surface-markings produced by the inner margin of the Coraco-brachialis and Biceps, the known course of the vessel, and its pulsation, which should be carefully felt for before any operation is performed, as the vessel occasionally deviates from its usual position in the arm. In whatever situation the operation is performed, great care is necessary on account of the extreme thinness of the parts covering the artery, and the intimate connexion which the vessel has throughout its whole course with important nerves and veins. Sometimes a thin layer of muscular fibre is met with concealing the artery; if such is the case, it must be divided across, in order to expose it.

"In the upper third of the arm the artery may be exposed in the following manner. The patient being placed horizontally upon a table, the affected limb should be raised from the side, and the hand supinated. An incision about two inches in length should be made on the ulnar side of the Coraco-brachialis muscle, and the subjacent fascia cautiously divided so as to avoid wounding the internal cutaneous nerve or basilic vein, which sometimes runs on the surface of the artery as high as the axilla. The fascia having been divided, it should be remembered that the ulnar and internal cutaneous nerves lie on the inner side of the artery, the median on the outer side, the latter nerve being occasionally superficial to the artery in this situation, and that the venæ comites are also in relation with the vessel, one on either side. These being carefully separated, the aneurism needle should be passed around the artery from the ulnar to the radial side.

"If two arteries are present in the arm in consequence of a high division, they are usually placed side by side; and if they are exposed in an operation, the surgeon should endeavour to ascertain, by alternately pressing on one or the other vessel, which of the two

communicates with the wound or aneurism, when a ligature may be applied accordingly; or if pulsation or hemorrhage ceases only when both vessels are compressed, both vessels may be tied, as it may be concluded that the two communicate above the seat of disease or are reunited.

"It should also be remembered that two arteries may be present in the arm in a case of high division, and that one of these may be found along the inner intermuscular septum, in a line towards the inner condyle of the humerus, or in its usual position, but deeply placed, beneath the common trunk: a knowledge of these facts will at once suggest the precautions necessary in every case, and indicate the necessary measure to be adopted when met with.

"In the middle of the arm the brachial artery may be exposed by making an incision along the inner margin of the Biceps muscle. The fore-arm being bent so as to relax the muscle, it should be drawn slightly aside, and the fascia being carefully divided, the median nerve will be exposed lying upon the artery (sometimes beneath); this being drawn inwards and the muscle outwards, the artery should be separated from its accompanying veins and secured. In this situation the inferior profunda may be mistaken for the main trunk, especially if enlarged, from the collateral circulation having become established; this may be avoided by directing the incision externally towards the Biceps, rather than inwards or backwards towards the Triceps.

"The lower part of the brachial artery is of extreme interest in a surgical point of view, on account of the relation which it bears to those veins most commonly opened in venesection. Of these vessels, the median basilic is the largest and most prominent, and, consequently, the one usually selected for the operation. It should be remembered that this vein runs parallel with the brachial artery, from which it is separated by the bicipital fascia, and that in no case should this vessel be selected for the operation, except in a part which is not in contact with the artery."

It has been objected to Mr. Gray's book by one of our most esteemed contemporaries, that the author has not rendered justice to anatomical discoverers, in that he does not ascribe to each by name the merit which is undoubtedly his due. Now in this condemnation we cannot at all agree; any work on a demonstrative subject, such as anatomy, can, in the present age, be nothing but a compilation, and the chief, if not the only merit which a writer on it can claim, is as to the manner in which he arranges his materials and the language he employs. To interlard his sentences with constant references to authorities would but mar the context, and, spoiling the style, render its reading tiresome and troublesome.

The work of Mr. Humphry, though more limited in its

object than that of Mr. Gray, being devoted to only a single division of the anatomy of the human body, is of a more ambitious character, and must rank higher from being of a much more scientific nature. It does not consist of a mere detailed account of *dry* bones; but a beautifully written description of their development, growth, structure, union by joints, position in the human economy, varieties in the lower animals, and uses in standing, walking, and running, leads gradually and pleasantly on to the last most interesting chapter, "On the Homology of the Skeleton."

"To hear the study of the human skeleton," says Mr. Humphry in his preface, "complained of as dry and tedious, is always, to me, a matter of regret. It really may be, and ought to be, one of the most interesting of studies. To the practical surgeon it is essential. To the philosophical anatomist the human skeleton is most instructive, being related to the intelligent will of man on the one hand, and to the various members of the animal kingdom on the other. It is, moreover, the framework of nature's masterpiece, the most perfect piece of mechanism, replete with fearful and wonderful manifestations of creative skill. The contemplation of such a work is one of the noblest exercises of the mind, not merely on account of the many physical and other problems which it suggests, but, still more, because it tends to give additional force to the conviction, derived from more direct revelation, of the infinite wisdom, power, and goodness of the Creator."

As regards the homology of the several parts of the skeleton Mr. Humphry dissents from the views of Professor Owen, now commonly adopted in our schools, and he promises to state his reasons more at length in an account of the "Morphology and Homology of the Vertebrate Skeleton," to be published hereafter as an Appendix to this volume. In the meantime he gives the following general outline of his views:—

Centra.

"The BODIES of the vertebræ, arranged in front of one another, and connected, in most instances, by fibro-cartilage, form the centre, or axis, of the skeleton, which is interposed between the cerebro-spinal nervous axis above, and the circulating, digestive, and respiratory viscera, beneath; they are, therefore, well named the *centra*. They are in close relation to, and are developed in close connexion with, the ganglia which form the primitive constituents of the cerebro-spinal neural axis; each centrum corresponding, apparently, with a pair of these ganglia. Their shape usually approximates to that of a sphere; but sometimes deviates from it very considerably. One of the modifications is caused by out-growths from the superior or inferior surface of the centrum. Those in the former situation—such as the posterior clinoid processes of the sphenoid bone, and the crista galli of the ethmoid—may be called *Supra-central;* those

Supra- and sub-central growths.

upon the under surface—such as the prominences on the forepart of the cervical vertebræ, and the rostrum or azygos process of the sphenoid—may be called *Sub-central.* They are usually mere outgrowths; but it appears that, when large, they may be developed from separate osseous nuclei; and it is probable that the inferior arch of the atlas is of this nature.

Neural arches.

"The neural axis lies upon the upper surface of the centra, enclosed in a tube which is formed by a series of bony arches called *neural Arches.* Each of the neural arches rests by a pedicle, on either side, upon one of the centra, and, with it, constitutes a complete transverse segment of the *neural Tube;* and each neural arch is composed of lateral portions, or alæ—the *neural Alæ*—which spring from the sides of the centrum, and which may be confluent in the middle line, above, or may be united by one, or two, mesial portions—the *neural Spines.* In the spinal column the neural spines are often absent, or are merely small osseous nuclei formed at the tip of the process which runs from the point of union of the neural alæ; in the cranium, however, they form an important part of the covering of the brain.

Neural spines.

Intervertebral foramina.

"Between the pedicles of the neural alæ of contiguous vertebræ are spaces—the *Intervertebral foramina*—which transmit vessels and nerves to and from the neural canal. In the cranium the nerves and vessels, which are more numerous than in the spine, pass not only through the intervertebral foramina, but through perforations in the pedicles.

Articulating processes.

"Processes grow out from the neural alæ, on either side, in front and behind, which come into contact with, and are jointed with, corresponding processes of the contiguous vertebræ—these are the *Articulating processes.* In the cranium, where the edges of the adjacent alæ are united in nearly their whole length, special articulating processes are not required; and their representatives can be distinguished only in the cartilaginous jugular facets of the occipital bones, and, perhaps, in the so-called spinous processes of the sphenoid bone.

Transverse processes.

"*Transverse processes* also grow out from the neural alæ, one or two on either side. When there are two, as in the cervical vertebræ, they are usually placed one above the other, the lower one springing from near the inferior extremity of the pedicle, close to the attachment to the centrum; and they enclose between them a space, which contains an artery. This space may be closed on the distal side by the confluence of the two transverse processes; it is thus converted into a foramen—the *transverse foramen.*

Ribs.

"Or, a separate piece of bone may be appended to the transverse processes on either side, to one or both as the case may be. It may become anchylosed with them, as in 7th cervical vertebra; or it may remain separate, as in the dorsal region. It may be called the *Transverse Ala.* Where it remains separate it is most commonly inclined downwards, on the side of the visceral

cavity; and, contributing to form the lateral wall of that cavity, it is called a rib. In some parts of the cranium, however, where the size of the neural cavity preponderates over that of the visceral, it is directed upwards, and assists the neural arches to form the covering of the brain. Under these circumstances it may be appended, directly, to the neural ala, without the intervention of the transverse process.

"The so-called 'viscera of organic life' are placed beneath the vertebral centra, and bear a relation to them similar to that of the brain and spinal cord, but not nearly so intimate. They are also, more or less completely, enclosed in an osseous tube, which is formed upon the inferior surface of the vertebral axis. This may be called the *Visceral Tube*, to distinguish it from the neural tube; with which it corresponds, inasmuch as it is formed of a series of arches—the *Visceral arches*—which descend from the sides of the centra, and unite in the middle line, below.

Visceral tube.

Visceral arches.

"Each visceral arch is an appendage to one of the centra; but the several visceral arches do not preserve their relations with their respective centra quite so regularly as do the neural arches; indeed it is sometimes difficult to tell to which of the centra a particular visceral arch belongs. They are subject also to considerable varieties, in accordance with the variations of the number, size, and shape of the organs they have to protect, and the different uses to which they are made subservient.

"The most regular components of the visceral arches are the *Hæmal parts* of the vertebræ. They correspond, apparently, with the neural parts, being formed, like them, of lateral portions, or *alæ*, one on either side, which are approximated at their distal extremities, and are united in the mesial line, either directly, or by the intervention of one or more separate portions—the hæmal *Spines*. In the caudal region of many animals the hæmal elements are applied, directly, to the under surface of the centra, forming with them the whole of the visceral tube, which, in that region, contains only the caudal vessels: hence the name 'Hæmal.' Commonly, however, for the purpose of enlarging the visceral tube, and of giving more space to the various organs contained in it, the hæmal elements are removed to a considerable distance from the centra, and are appended to the extremities of the transverse alæ, or ribs, which, as we have seen, are bent downwards to assist in forming the visceral arches. In the parts of the cranium in which the transverse alæ are devoted to the construction of the neural, instead of the visceral, arches, the hæmal elements are still appended to them.

Hæmal elements.

"An important office performed by the hæmal parts of the vertebræ at the anterior and posterior regions of the trunk, is to afford a basis for the *Limbs*, which, it appears to me, should be regarded as appendages to the hæmal, and not to the pleural, components of the skeleton."

The limbs.

The volume is illustrated by sixty beautifully executed lithographs, which the author informs us were drawn upon stone, from nature, by his wife, and which are alike creditable to her head and her hand.

We look upon the publication of these two books as a great addition to English medical literature, whether we regard their composition, or the style in which they are got out, and we warmly commend them to the notice of our readers.

Étude sur le Développement et la Structure des Dents Humaines. Par ÉMILE MAGITOT, Docteur en Médecine de la Faculté de Paris, ancient Élève des Hôpitaux et de l'École Pratique. Accompagnée de deux Planches gravées. Paris: J.-B. Baillière et Fils. 1858. 4to, pp. 112.

WE shall best explain the nature and arrangement of this work by giving the author's threefold division of his subject.

"The first includes the study of the dental follicle in all its component parts, considered previously to the commencement of the production of the hard substance of the tooth. It is divided into two chapters: the first treating of the development of this follicle; the second, of its structure.

"The second contains an examination of the phenomena of the development of the dental substances properly so called, ivory, enamel, cement, in the follicle already investigated.

"The third part, lastly, consists of an inquiry into the structure of the adult tooth, that is to say, into the definitive arrangement of the elements, the mode of evolution of which has been previously studied.

"In adopting the arrangement and division of the subject just described, I have examined the component tissues of the teeth, under three different and successive aspects:—

"1. During the embryonic period, in the state of a formative bulb;

"2. In the period of active development, when the dental elements are being formed and arranged;

"3. In the adult period, when the tooth is fully formed."

M. Magitot's work exhibits great research; it is carefully executed, and well brought out. The subject is fully illustrated by means of two very good plates, containing seven figures each.

Über die Veränderungen der Gewebe durch Brand. Von Hermann Demme in Bern. Frankfurt A.M.: Meidinger, Sohn, & Comp. 1857. 8vo, pp. 102.

On the Changes of Tissues by Mortification. With 24 original designs, engraved on steel.

Under the modest pretension of a contribution to pathological histology, we welcome from the son of the well-known Professor Demme, of Berne, a work on the microscopical examination of the alterations which animal tissues, especially those of the human body, undergo when attacked by mortification. This work, which supplies a real desideratum in science, comprises the results contained in a successful prize essay, together with the author's subsequent researches on the subject. It is divided into two parts. In the first he describes the new formations found in mortified parts, which either did not exist in the normal tissues, or are modifications of existing organs. Their enumeration is pretty extensive, comprising:—

Fatty matters;

The various pigments which colour the gangrenous parts, many of which are evidently modifications of hematoisine.

Crystalline products, such as ammonio-phosphate of magnesia, stearine, uric acid, ureate of ammonia, and others, which, to the number of fourteen, he finds in these devitalized parts.

This part of the work is concluded by a description of the various algæ and fungi, which likewise make their appearance there in goodly numbers, as he enumerates seven species of cryptogamic vegetables, and nearly as many species of infusoria.

One of the author's most interesting remarks relates to the existence of the so-called gangrene corpuscles (corpuscula gangrenosa) first noticed by Valentin. He describes them as consisting of minute particles which are non-crystalline, of various irregular forms, triangular, quadrangular, cruciform, &c. When under a magnifying power of 35 diameters, they are imperceptible, but when magnified to 75 diameters they appear as innumerable fine points. They have no cell structure, and are easily distinguished from fine fatty granules by their being unaffected by alcohol and ether. He ascribes these corpuscles to a modification of hematoisine. In a case of gangrene of the tongue from ligature, he found them to exist two days after the operation.

The second part of the work H. Demme devotes to the observation of the gangrenous tissues, comprising the blood and plastic exudations. Each tissue is treated of in turn with

much care and minuteness. In the examinations on the nervous system two cases of gangrene of the brain are very carefully described.

The most novel part of the work is the examination of the peripheric nerves. Most of our readers must be aware of the light which has of late been thrown by physiology upon the alterations occurring in nerves when separated from their central organs. The separated end becoming, as it were, dead among the tissues, undergoes very considerable changes in the structure of its elementary fibres, whose contents, after first breaking up into clumps, become granulated, as if they had undergone fatty degeneration. An English physiologist, Dr. A. Waller, of Birmingham, has applied this fact as a general means of investigating the nervous system.

These alterations of the nerve fibres are so invariable and progressive, that by their means microscopic examination of a divided nerve enables us to ascertain for how long a period the nerve has remained dead in the animal economy. It was, therefore, a matter of much interest to ascertain exactly what alterations take place in the structure of nerve fibres in gangrenous parts.

H. Demme's observations, although they have advanced our knowledge, still leave much to be desired on this subject. In gangrenous parts he discovers two distinct kinds of alterations of nerve-fibres. In the first they are merely such as we commonly meet with in nerves that have been ill-prepared for the microscope. Thus, the normal transparent pulp of the nerve-tubes appears cloudy, and, as it were, coagulated, and the continuity occasionally interrupted. This is the most frequent alteration discovered by the author in the nerves of mortified parts. In other cases he has observed what is usually termed the fatty disorganization of nerves, which we have above alluded to. We will not enter here upon the question as to the specific nature of the alterations of the nerve pulp, but only remark that this is still a debated point among physiologists, some regarding it as a fatty disorganization, while others (as Robin and Waller) consider it to be merely the result of the disaggregation of the pulp in consequence of the commencing absorption of its constituent parts, which eliminates the fatty and proteic elements much more slowly than the rest.

We regret to observe that H. Demme makes no allusion to the researches published in this country on these alterations of the nerve fibres. He will find them, accompanied by others in a less advanced stage, figured and described by Dr. Waller in

the Philosophical Transactions of the Royal Society[a], copies of which the Society so liberally supplies the University of Berne with, amongst others, and which for any future edition it will be desirable for H. Demme to consult. He will also find in the "Comptes rendus de l'Académie des Sciences, Paris"[b], a general application of these alterations of nervous tissue to the investigation of the nervous system, as well as its application in particular to the sympathetic nerve.

We have no doubt that, after consulting the above-named essays, H. Demme, in any future edition of his excellent work, will alter the following passage:—

"To Schiff belongs the merit of having removed all doubt upon this phenomenon. He has, after numerous experiments, united together the exact signs by which nerves that have for a long period during life been separated from their central organs, can after death be distinguished from all others in the easiest manner possible."

H. Demme gives an interesting case of compound fracture of the tibia and fibula, where the foot was nearly torn from the leg, which mortified in twenty-four hours. On the fourth day mortification extended to the whole limb, and ten days afterwards death ensued. On examining the femoral and sciatic nerves and ramifications, it was found that where softening of the parts around them existed, the nerve tubes were altered in the same manner as above described in mortified parts; while in the intermediate spaces, where the nerves were no longer in contact with gangrenous matter, their primitive fibres had undergone various stages of fatty disorganization. The difference in the two cases is evidently owing to the existence of the vital powers of absorption in these last-mentioned parts, while in the former no such influence was exerted.

The work is illustrated by engravings from excellent drawings made by the author.

[a] Philosophical Transactions, Part ii., 1850; Journal of Medicine, July, 1852; and Paget's Lectures on Surgical Pathology, vol. i. page 144.

[b] Comptes rendus de l'Académie des Sciences, Novembre, 1851, vol. xxxiii., page 606; et Nouvelle Methode Anatomique pour l'Investigation du Systéme Nerveux pendant la vie, et apres la mort. Bonn, 1852.

A Treatise on the Pathology of the Urine, including a complete Guide to its Analysis. By J. L. W. THUDICHUM, M. D., &c. &c. With seven Plates. London: John Churchill. 1858. 8vo, pp. 429.

THE attention paid of late years to the more accurate study of the pathology of the urine, and of urinary deposits, would argue a growing conviction amongst medical men of the importance of such studies in elucidating the phenomena, in facilitating the diagnosis, and in improving the treatment of disease. But were it to induce us to conclude that this conviction is but a growth of modern times, it would lead us into committing a grave injustice to the memory and reputation of the more celebrated authors, even of antiquity. In all their works we frequently find reference made to the more marked of the physical changes occurring in this secretion, and have just reason to admire the shrewdness of the diagnosis founded on such appearances. Nor can we be surprised at this, for what can be more reasonable than that these phenomena should attract the attention of even the most superficial observer, and impress him with their significance and importance? The amount of their chemical knowledge, however, was a sufficient barrier to their pushing, to anything approaching their just value, the indications to be derived from this source, and at the present day we can but wonder at the sagacity of remarks founded on such unsatisfactory data as were at the command of the older authors.

In despite of all these difficulties, however, we find due respect paid to the importance of studying the urine to enable the practitioner to give a correct prognosis in the treatment of disease. Hippocrates all through his writings makes frequent reference to the changes this fluid may undergo during the progress of different diseases; and lays down, in forcible language, the results that may ensue. In his celebrated "Prognostics," he describes many modifications of this secretion, tries to distinguish between the precipitates it may let fall, and draws particular attention to the importance of studying its various tints; and in this he has been followed by almost every writer who has written since his day. In truth, "Prognostics" appear to have been a favourite study, if we are to judge from the writings of Galen, Rhazes, Prosper Albinus, &c.; and amongst them the prognosis derivable from the urine held a leading position.

Still, chemistry was but a very imperfect science, and it is to this circumstance alone can be attributed the many grave

errors that are to be found in the works of otherwise acute observers, when describing the appropriate treatment for urinary complaints. To this cause alone can we refer the eager credulity with which accounts were received of medicines capable of dissolving urinary calculi. That many painful symptoms were abated by the employment of such medicines cannot be questioned; but that it is more than doubtful that they could act as lithontriptics, in the true sense of the word, is equally unquestionable; still, many were the hours of unavailing toil devoted to the ardently wished-for discovery of this solvent, and many were the announcements of success, and that by men of undoubted professional integrity,—the learned Helvetius triumphantly stating, that under the employment of the *Pareira brava*, calculi of considerable size had disappeared, and that the operation of lithotomy henceforward was to rank with things that had passed away.

That we should no longer waste profitable time in such idle speculation, is due to the laborious exertions of men who have devoted themselves to the elucidation of the chemistry and pathology of the urine, and of urinary deposits. Improvement in this department has kept pace with the advances made in other respect by chemists; and perhaps in no other way has the medical profession become more deeply indebted to the science of chemistry than in the insight that has been afforded into the history of urinary affections by the unremitting exertions of its votaries.

The chemical history of urine has yet to be written, and, when written, its perusal will afford us not only food for amusement, but for instruction. The history itself, for reasons already ascribed, should be of modern date; indeed, it can only commence with the year 1669, when Brandt succeeded in extracting from it phosphorus. Previous to that period, Boyle had made several fruitless efforts to discover and identify the several saline ingredients contained in this fluid; nor can we be surprised at his failure when we take into consideration the infant state of chemical knowledge at the period; nevertheless, he learned from Brandt his process for obtaining phosphorus from urine, and taught it to his laboratory assistant, Hankwitz, who for many years was the sole person who supplied this remarkable elementary substance to the chemists of Europe at large.

As we have already observed, the physical characteristics of urine had been for ages the subject of attentive consideration on the part of each succeeding physician: therefore, we may fairly infer that its putrefactive decomposition could not have

escaped their notice. Lemeri, whose system of chemistry appeared about the end of the seventeenth century, paid particular attention to this subject, and devotes an entire chapter to the consideration of this phenomenon; in this study he was subsequently followed by Margraaf, who also improved Brandt's process for obtaining phosphorus from urine, and at the same time made a great step in the analytical examination of this secretion, by the announcement of the existence in it, and by his description, of the ammonio-phosphate of soda.

Rouelle, however, is the person to whom the profession is undoubtedly indebted for the position that the chemistry of urine now occupies; he it was who first, in 1773, described urea, which substance he extracted from urine by the agency of alcohol, and which he described under the name of the soapy matter; to him also is the merit due of describing hippuric acid, which he did in the year 1784. His efforts, however, to describe the urinary salts were not attended with much greater success than awaited in this respect the previous labours of Boyle.

The illustrious Scheele ably followed the footsteps of Rouelle in this department of chemical science; he first described, in 1776, uric acid, and demonstrated its existence in urinary calculi, and also detected the presence in the urine of phosphate of lime. But the first systematic analysis of urine, an analysis closely approximating the standard of the present day, was furnished to us by Berzelius. His account of the properties of urine, including a description of the action of reagents on this fluid, appeared in the year 1808; and a further description, including its quantitative analysis, was published in the year 1813,—since which period scarcely a year has elapsed without some further addition to this most important, and apparently unexhausted, department of vital chemistry. The description of the composition of urine in health having been once put on something like a satisfactory footing, it was but natural that its pathological history should commence to occupy the attention of every person interested in the study of disease. To ascribe particular merit to one more than another would be as invidious as it would be difficult; each has worthily laboured in his respective department, and the mass of important information hereby collected cannot be too highly valued. Suffice it to say, that many a light has been thrown on a disease otherwise obscure, by an acquaintance with the facts recorded by those most laborious investigators, and that no one can feel himself justified in attempting to prescribe for disease who

has not made himself familiar, at all events, with the leading principles of urinary pathology.

The work before us is divided into a number of chapters, each of which is occupied in the consideration of one or more of the constituents, normal and abnormal, of urine. The first is occupied with the description of the general characters of urine, and almost in the first page we have some observations that, though trite to one who has devoted any attention to the subject, still, from their practical bearing, deserve to be reproduced here:—

"In considering a specimen of urine with regard to its turbidity, great care must be taken in ascertaining whether it was passed in a turbid state, or whether the turbidity and sediment supervened after its emission, or after a lengthened period of rest. The prognosis of many cases is determined by this circumstance, an accurate knowledge of which, not always easily to be acquired, is therefore of practical importance.

"We must guard against considering simple clearness of the urine as a sign that there is nothing wrong in that fluid. Many abnormal substances, the products of disease, are found in clear urine, and many pathological alterations in the quantities of the normal ingredients occur in a limpid fluid."

The tints of urine also are well described, and amongst the abnormal pathological tints we have enumerated a variety of colours, with a table attached, giving much valuable information. One variety of coloured urine, however, has been omitted —the milky. Many cases are on record, in both sexes, where the urine has been passed of a milk-white colour. Caballe enumerates some in which he discovered a notable proportion of caseine, and Bouchardat has published an analysis of a case of milky urine passed by a woman labouring under peritonitis. The observations on the causes that may *accidentally* make urine present an alkaline reaction are of the greatest importance, and as such an indication might give rise to most ungrounded apprehensions, we shall not hesitate to transcribe them here:—

"But the alkaline decomposition of even healthy urine may be favoured by certain circumstances requiring the most scrupulous attention of the practitioner, the neglect of which will make him liable to grave mistakes. Urine which is already in a state of alkaline decomposition, when added even in small quantity to healthy urine, will, like a ferment, induce and hasten the decomposition of the normal fluid. The vessels, therefore, in which the urine is collected, must be washed and scalded with great care; otherwise the small quantities of decomposing urine adhering to their walls may induce fallacious conditions of the fluid collected.

"There are other circumstances which may make the acid urine alkaline in a shorter period than usual. Such are the presence of mucus and pus, which undoubtedly play the part of a ferment in many cases. This may be proved by dividing a specimen of acid urine into two parts, filtering the one immediately, leaving the other as it is, and letting both stand side by side. The filtered urine will often present its original acid reaction, when the portion which has not been filtered is already alkaline. I have found that decanting the clear fluid from the settled cloud of mucus serves the same purpose."

The entire of the remarks on ammoniacal urine are worthy of most attentive study, and will well repay careful perusal. The recommendation to wash out the bladder in such cases with warm water, by means of a syringe and double canula, though not possessing the merit of novelty, also has our heartiest commendation, we having had practical experience of its utility under such circumstances.

In making calculations derivable from experiments on urine, two objects are of primary importance,—first that the urine should be free from accidental impurities; the second, that these calculations should only be admitted that have been founded on the *entire quantity* passed in the twenty-four hours. To the first of these points attention has been frequently called by all systematic writers on the subject, and so important does Dr. Beale justly consider it to be, that in his beautiful series of Plates illustrating Urinary Deposits, &c., the very first three plates are devoted to the "extraneous matters commonly found amongst urinary deposit;" amongst them we find such articles as cats' hair, human hair, various kinds of starchy matter, a tea-leaf, &c. Dr. Thudichum also has not omitted to give us prudent caution on this subject. But Dr. Beale's observations on this point are most important, and to these we refer such of our readers as desire more extensive information on a subject of so practical a bearing.

The average quantity of urine passed in the twenty-four hours by different individuals, is, in our opinion, an unknown quantity—inasmuch as individuals so vary in this respect; we have tried ourselves to fix the amount even in the same individual, and find so many circumstances to regulate it, that we have come to the conclusion that each individual must fix the quantity by his own habit of body. Dr. Thudichum's table fully bears out this statement by its discrepant results; the average found by him to be passed in the twenty-four hours exceeds that generally laid down by English authorities. His statement that "certain regular variations in the hourly quantity of urine are

produced by the cosmic influences of day and night," are entirely at variance with Thompson's elaborate tables on the same subject; and on this point we are more inclined to agree with Thompson than with him; at the same time, we must subscribe to his views on the importance of estimating the value of a quantitative analysis of urine upon the knowledge of the total amount of it discharged in a given time.

The following extract fully shows the practical value of estimating accurately the quantity of urine passed by a patient:—

"It is a fact, derived from general experience, and which may be verified any and every day, *that the quantity of the urine is diminished in all acute febrile diseases*, viz., in exanthemata and zymotic diseases, in low gastric fevers and typhus, in rheumatic fevers, in all inflammatory diseases, such as pneumonia, pleuritis, and bronchitis, and in the inflammatory fevers of tropical climates or miasmatic regions. In all these diseases, and in many more, *a constant diminution of the quantity of urine is accompanied by, and, therefore, pathognomonic of, a constant increase in the intensity of the disorder. When the quantity of urine remains very low* (*below* 800 *c.c.*, $25\frac{3}{4}$ fl. oz., *per day*) *for any length of time, then we may conclude that the intensity of the disease has not abated. A constant increase in the quantity of the urine, however, is a favourable symptom, and shows that the patient has passed the acme, and that the diseased action is abating* (vide Vogel, loc. cit., p. 226). *During the period of convalescence the quantity of urine becomes normal, or exceeds in some cases the normal quantity.*

"Professor Vogel observed the following case, illustrative of these points. It is the more interesting, as the normal quantity of the urine discharged by the patient during health had been measured for a certain period just before he became ill. He was an attendant in the hospital, and became the subject of typhus fever. During the first three days of the illness, the total quantity of urine in twenty-four hours, amounting to 1800 c.c. (58 fl. oz.) during health, fell gradually to 200 c.c. $6\frac{1}{2}$ fl. oz.): it rose during the next five days regularly up to the normal 1800 c.c. (58 fl. oz.), exceeded the amount soon up to 2200 c.c. ($70\frac{3}{4}$ fl. oz.), and then returned gradually to the usual average quantity.

"*When a disease, acute or chronic, takes a fatal turn, the quantity of urine becomes frequently very low, or remains in a fluctuating low state.* This is the case in all diseases ending with or by exhaustion of the material of the component parts of the body. In cases, however, the fatal termination of which is due to a more sudden interference with the powers of the nervous system, or with the mechanical action of the lungs and heart, the quantity of the urine is not usually very much diminished.

"*The quantity of urine is materially diminished in dropsical diseases, with or without diseased kidneys.* Common practice has made

the amount of urine discharged by such patients the index of their improvement or otherwise, and has made a small quantity of urine, in cases in which the cause of the disorder is not the kidney itself, a therapeutical indication for the administration of diuretics.

"*The quantity of the urine is materially increased in those diseases which we commonly term diabetes.* In these cases, however, as in cases of diseased kidneys, it is necessary to give particular attention to the quality of the urine at the same time, when the distinctions between hydruria, diabetes insipidus, and diabetes mellitus, will become prominent."

We have explicit directions given us for taking the specific gravity of the urine, and the various ways in which this process can be conducted are ably described. Dr. Thudichum (no doubt on strict chemical grounds, correctly) gives the preference to the method of taking the specific gravity by the agency of the air-pump; still we are of opinion that the incorrectly so-called urinometer has, with all its drawbacks, peculiar advantages for bed-side analysis; and, with proper corrections, its indications may be taken as being at all events very near approximations to fact; still, when absolutely correct results are desirable, we must agree in the force of the following remarks:—

"This uncertainty in the results obtained by the gravimetrical method is most likely partly the consequence of the fact, that the various constituents of the solid residue of the urine do not always stand in the same proportion to each other. There is also the error to which the calculation of the temperature makes us liable; further, the error arising from the different densities of the different strata of fluid, as already stated; further, the difficulty of making the scale of the gravimeter sufficiently long to allow of an accurate reading of the level of the urine, which may assume different curves as the different densities of the urine determine a greater or less adhesion to the sides of the vessel and to the stem of the gravimeter. What with having to employ two gravimeters, to compensate and calculate for temperature, and density from depth, and being after all subject to inaccurate reading and the varying proportions of the solids in urine—errors which in the aggregate amount to a difference from reality of from one-tenth to one-fourth,—I must say, that I think the trouble of the methods with the balance and air-pump nearly equalled, and yet the result of a hundred gravimetrical analyses is scientifically and practically not worth one accurate analysis."

All the trouble, however, involved in ascertaining the relative proportions of solid ingredients contained in the urine is amply compensated for by the value of the pathological indications furnished to us by such knowledge. And the more this subject is investigated, the more important, we have no

doubt, will be the results: it will afford us additional data on which, with greater confidence, to found our prognosis, and in many an emergency will yield us good service. Dr. Thudichum's observations on this point express so ably our own views on the subject, that we do not hesitate to transcribe them here:—

"I have now spoken of disease generally; and the remarks made of course apply to the two great classes of disease, acute and chronic, with equal force. But the fluctuations in the amount of solids occurring in both are of a very different prognostic value; for in chronic disease, with a limited amount of solids, a rise in their amount is, as a general rule, a forerunner of considerable and mostly lasting improvement, and indicates that the chemistry of the body is actively employed in renewing the material of the organs and rectifying their functions. To this rule diabetes mellitus alone forms an exception, where a rise in the amount of solids indicates an exacerbation of the disease; and, in this respect, diabetes forms the transition from chronic to acute disease, in which, on the whole, a rise in the amount of solids in the urine during the acme is an unfavourable symptom, indicating an excessive disintegration of the tissues and juices of the body, which must necessarily lead to exhaustion of the material substrata of life. Under all circumstances, a constant and gradual decrease of the amount of solids is as unfavourable a symptom as the decrease of the total quantity of urine discharged, because it indicates the decay of life, and a probable fatal termination of the case.

"The indications of the solids become more varied as soon as they are considered with relation to the amount of other excreta. First, as regards the amount of water by which they are accompanied in the urine, four distinct classes of cases must be borne in mind. If a very small amount of solids is contained in a similar amount of water, we may conclude upon a corresponding amount of anæmia in the individual, always provided that disease of the kidney be not present. In the latter case, a small amount of solids indicates the retention of urea, which may probably end in uræmia.

"If a small amount of solids is contained in a larger or large amount of water, it may possibly be the consequence of excess of drink of some kind. Many cases of hysteria, of anæmia with hysterical symptoms, are accompanied by this description of urine. It is the essential symptom of a decided improvement in many cases of hydræmia and dropsy, and when it occurs in a patient with no particular cause to account for it, it has properly been termed *hydruria.* Of this disease Professor Vogel observed a very decided, and, therefore, illustrative case. A man, thirty-five years of age, of a powerful frame, and suffering from rheumatism of the neck, discharged a quantity of urine, amounting to 2983 c.c. (104 fl. oz.) per day in the mean of twenty-four days. But its specific gravity was very low, varying between 1005 and 1012; and the average quantity of solids discharged per day accordingly only amounted to 42 grammes (630

grains). This case was, therefore, clearly one of hydruria. The patient did not seem to suffer under this excessive discharge of fluid.

"When the amount of solids becomes larger, but still remains below the standard of health, and the amount of water is at the same time diminished—in other words, in diseases with a small amount of urine of high specific gravity—the acuteness of the pathological process is clearly indicated. Beginning with the physiological excessive perspiration, there are many pathological conditions, as the sweat of fever, thirst, starvation, diarrhœa, and fever of essential or symptomatic nature, of which this condition of urine is a regular symptom.

"In the fourth class of cases, both the solids and the water of the urine are present in excess. They form a special and specific class of diseases, to which the generic name of diabetes has been given. The genus has, however, only two species, of which the one is distinguished by the presence in the urine of sugar, and, therefore, goes by the name of diabetes mellitus; the other subdivision comprises cases where, in a large amount of water, the increased amount of solids is made up of other solids than sugar, termed diabetes insipidus. In both classes of diabetes, the wear of the body is considerable, and either at intervals, or throughout the course of the disorder, surpasses the amount of nutriment taken in. Diabetes mellitus, from its chemical interest, and the facility with which it may be artificially produced in animals, has been favoured with more attention of late than diabetes insipidus, a disease with which, perhaps, many difficult cases of hysterical anæmia and intractable ailments will have to be classed hereafter. If the total quantity of urine amounts to more than 3000 c.c. (105 fl. oz.) per day, and if the specific gravity shows an excessive amount of solids, ranging from the normal 60 grammes (926 grains) up to 130 grammes (2006 grains), or even more, giving on an average about 80 grammes (1234 grains) per day, we may then with perfect safety ascribe the excessive destruction of the constituents of the body to this excessive secretion, and place to its account a number of symptoms usually following in its train, such as the pale looks and the headach of anæmia, vertigo, the tenderness of certain dorsal vertebræ on pressure, and spasms in the muscles of the neck, such as were observed by Vogel in a marked case of this description."

The pathological importance of determining the quantity of urea present in a given amount of urine is becoming each year more fully appreciated; its value as a means of diagnosis, the important relations it holds to the process of disintegration in the economy entitle it to every consideration. Dr. Thudichum does not enter into the physiological war raging between Liebig and Bischoff on the one side, and Lehman, Bidder, and Schmidt on the other, as to the origin of urea; he does not take upon himself to act as umpire on the *quæstio vexata* whether

it be a product of the metamorphosis of the nitrogenous tissues, or be dependent for its formation on the quantity of albuminous food ingested, or the consumption of already formed albuminous tissue; nor does he take upon himself to decide whether it be formed "in the blood or the blood corpuscles, or in the muscles;" but he does fully recognise the great importance of correctly estimating its relative amount, and attributing to it its just pathological value. With this object in view, he gives at length three of the most important processes at present in use for the exact determination of the quantity of urea present in a given sample of urine—Liebig's, Bunsen's, and Davy's; a briefer notice is given also of the methods pursued by Miller, Heintz, and Ragsky. He enters fully into the three processes which he has selected as being peculiarly appropriate for determining this most important point; and for ourselves we must say that, for clinical purposes, that suggested by Dr. Davy, in consequence of its greater facility of application, possesses the greatest value. The results procurable by Liebig's method, and by his own, have been contrasted by Dr. Davy in his valuable paper in the Philosophical Magazine for June, 1854, and the difference may be stated to be inappreciable.

The quantity of urea secreted in the twenty-four hours has been stated by our author at from thirty to forty grammes; this corresponds with the statements on the same subject by Rummel, Bischoff, and Scherer. It has been established that the quantity of urea will vary, not only with the quantity, but with the quality of the food ingested,—fat, alcohol, tea, and coffee diminishing, whilst salt and gelatine increase, the quantity of urea eliminated; active bodily exercise also has a similar tendency,—the action of free imbibition of water in increasing or diminishing the quantity of urea secreted, being still a mooted question. On these points Dr. Thudichum has not given us as full an account of the literature of the subject as its importance demands,—a remark that will also apply to his observations on the pathological indications of urea. The difficult question of uræmia is intimately connected with this subject, and merits more consideration than he seems inclined to pay it. The valuable observations of Frerichs or of Scholthin on this subject are not even alluded to, and this the more astonishes us when we perceive, by the elaborate directions he has given for its estimate, the value which he must, in common with all other pathologists, set on it as a semeiological indication.

The more fully to understand the question alluded to, we

must be allowed to remind our readers of the change which urea is supposed to undergo in the system, when unduly retained there. By absorbing two atoms of water, urea is supposed to be changed into carbonic acid and ammonia, the latter of which is eliminated principally by the lungs. This equation explains the reaction:—

$$C_2 H_4 N_2 O_2 + 2 HO = 2 (NH_3 + CO_2).$$

Now, Frerichs has made a series of experiments (by injecting ammonia into the veins) to prove that it is by its formation and by its deleterious effects that the retention of urea proves noxious. He has also demonstrated under such circumstances, that ammonia is exhaled. Scholthin has taken up this subject with vigour, and holds that the ammoniacal exhalation is but an accidental occurrence, depending on carious teeth, &c.; and alludes to numerous cases of true uremia, in one of which only the presence of ammonia so eliminated could be detected. Now at this moment we have vividly in our recollection, amongst others, one case of *total* suppression of urine, lasting for many days, where the ammonia exhaled was of so palpable a nature as to distress the surrounding attendants. Scholthin, however, does not attempt to invalidate the result of Frerichs' experiment; he only denies its applicability to the question at issue.

In addition to typhus and pneumonia, the diseases mentioned by Dr. Thudichum as those in which the amount of urea is increased, might be enumerated acute tuberculosis, pleuritis, rheumatism, especially when complicated with endocarditis, but above all meningitis. Heller's observations on this point, though not alluded to by our author, are well worthy of attentive perusal by those who desire further information on this most important subject. On the diminution of urea in disease we shall quote Dr. Thudichum's own words, as they are of most practical importance:—

"But in diseases which are chronic and accompanied by impaired nutrition, the amount of urea sinks below the average.

"The lowest amount of urea which I have ever observed to be discharged by a patient during twenty-four hours was 75 grains, in 200 fluid drachms of pale, faintly alkaline urine. This was from a lady suffering from an ovarian tumour, for which she had been salivated several years ago. The growth of the tumour had been arrested since that time, but an anæmiated condition of the body had established itself, against which all treatment was tried in vain.

"So low an amount of urea as 75 or 90 grains in twenty-four hours generally only occurs towards the fatal end of diseases, when

not only the production of urea is very limited, but also the excretory activity of the kidneys begins to become languid.

"The diminution of the quantity of urea may, however, be due to the failure of the excretory activity of the kidneys only, though at the same time an excess may be produced in the system. The excess is then retained in the blood, tissues, and juices of the body, and causes the cachexia commonly known as uræmia, which, if it be true that the products of decomposition of urea, namely, ammonia and carbonic acid, are the *materies et causa morbi*, had better be called ammonæmia. When urea is retained, water is also mostly retained in part, and, by its effusion into the cavities and cellular tissue, causes dropsical disease. Urea may then be detected in most secretions, excretions, exudations, and effusions. It is the same with dropsical effusions from other causes: they contain in solution an amount of urea derived from the blood, but in these cases the impairment of the excretory activity of the kidneys is a secondary symptom, and scarcely ever causes that amount of retention of urea which may lead to uræmia. And even then the kidneys may be stimulated by diuretics or by exercise, or a spontaneous rally of the system may revive their excretory activity, when, with a large amount of urine, a proportionally large quantity of urea, which has been accumulated in the system, may be discharged. The amount of urea will here indicate the amount of depuration effected, just as in retention of urea the smaller amount discharged will allow us to calculate, taking the whole case into consideration, the amount produced, and, by subtraction, the amount retained in the blood."

In Becquerel's classification of morbid urine, the proportion that the urea bears to the other ingredients of the urine fully bears out these views; and Simon gives us in his Chemistry some analyses of a most practical bearing to the same effect, especially showing the effect of venesection in pericarditis, in reducing the amount of the urea to its normal standard.

The chapter on uric acid and its compounds is for many reasons one of the most important in the entire work. The chemical history is most fully given—much more so, in fact, than is necessary for the ordinary purposes of the clinical investigator—but not so for those who desire full information on a most essential portion of urinary pathology. Dr. Thudichum's objections to the employment of hydrochloric acid in testing for uric acid will be recognised as being just by any one familiar with urinary analysis. The author takes Dr. Golding Bird to task in a very severe manner for his theory as to the production of uric acid and the urates in the urine; this in our mind being as important in a physiological as in a pathological view, and as his remarks have carried conviction to our mind, we venture to submit them for the consideration of our readers:—

"Uric acid itself is not soluble in the blood, at least not more than in water; it is only so in combination with a base—ammonia, soda, or lime. Uric acid, when occurring in the blood, is always met with as urate of soda or urate of ammonia. As venous blood is used for the examination (or mixed blood, if taken by cupping), the urate must have been an acid one, since the free carbonic acid, at the temperature of the body or at that of the common air, would not permit any neutral urate to exist, but would withdraw one equivalent of base. In venous blood, therefore, the urate must always be an acid one; and this is important to bear in mind. The question now arises whether the urate must also be an acid one in arterial blood; whether there is a sufficient amount of carbonic acid still present in arterial blood to keep the urate acid; or whether this cause of its acidity no longer exists in arterial blood, or, if present, is in any way neutralized by the presence of oxygen. Though it is not exactly ascertained how much of its carbonic acid the blood loses in its passage through the lungs, yet the data we possess are quite sufficient to put the question at rest. Magendie found in 100 grammes of venous blood 0·078 grammes of carbonic acid, in 100 grammes of arterial blood 0·066 grammes of carbonic acid. The blood in becoming arterial had, therefore, lost only 15·4 per cent. of its carbonic acid. Considering the small amount of uric acid salts which, under normal circumstances, is at any time present in the blood, we are quite justified in the conclusion that the 0·066 grammes of carbonic acid present in 100 grammes of arterial blood are sufficient to keep the urate acid. If it should be urged that there is some ammonia in the blood, which might make the urate neutral, I refer the objector to putrefying urine, in which, notwithstanding a large amount of free ammonia, the urates still remain acid. The urates, wherever we meet with them, are acid salts, and from the very property of the neutral urates to be converted into acid salts by the mere influence of carbonic acid, their occurrence in the economy is impossible. If, therefore, Vogel assumes that neutral urates may occur in the urine (and, as he believes, by the supervening of an acid in the urinary passages, may be transformed into acid salts, which being less soluble form a deposit), he thereby contracts a theoretical debt, which we are sorry to say he will never be able to pay.

"Granting, therefore, that uric acid is already formed in the arterial blood on reaching the kidney; that it can only remain in solution as a urate, and that an acid one; and that after having passed the kidneys it still continues to be an acid urate; where, I ask, are now the difficulties surrounding the explanation of the secretion of uric acid in the form of urates?

"Do we require such theories as that of Dr. Golding Bird, which begins with an impossibility, and, founded upon an opinion of Liebig, long since abandoned, is merely made for the purpose of explaining the acid reaction of urine by the formation of acid phosphates? But it is best to quote his words, which, at p. 84 of his fourth edition, are thus printed in italics:—

"'Uric acid, at the moment of separation from the blood, comes in contact with the double phosphate of soda and ammonia, derived from the food, forms urate of ammonia, evolving phosphoric acid, which thus produces the natural acid reaction of urine.'

"Of course, if uric acid itself is insoluble in the blood, and is only kept dissolved as a urate, mostly the urate of soda, how can it be separated from the blood, except as a urate? And being secreted as a urate, how can it take ammonia from the supposed phosphate? I will even go further back and ask, how could the uric acid, even if it were free, and as such contained in the blood, remain so, if it were throughout the whole course of the circulation in contact with the very phosphate with whose ammonia it is to combine after separation from the blood? These questions I hand over to the further consideration of the reader. Dr. Bird continues:—'If the whole bulk of the urine be to the urate of ammonia formed, not less than about 2701 to 1, the secretion will, at the ordinary temperature of the air, remain clear; but if the bulk of fluid be less, an amorphous deposit of the urate will occur.'

"This is the simple expression of the fact, as we meet it every day, that urates are more soluble in warm than in cold water or urine. But whether they require about 2701 (Dr. Bird), or 2789 (Dr. B. Jones), or 1608 times, or even less, namely, only 1100 to 1200 times their amount of water or urine for solution at a temperature of 77° F. (25° C.) is a matter to be decided only by direct experiment.

"The theory just quoted is incorrect in one more respect; namely, because it assumes that the common deposits of urates are made up of urate of ammonia *only*, since the fact is that they mostly are mixtures of the urates of ammonia, soda, and lime; the urate of soda having in almost all cases the decided preponderance.

"The conclusion of Dr. G. Bird's 'probable explanation of the mode in which uric acid exists in healthy urine,' of which I have quoted two passages, is a reiteration of the theory of Liebig on the acid reaction of urine being produced by the solution of uric acid in the solution of the common or tribasic phosphate of soda, whereby urate of soda is formed on the one hand, and an acid phosphate on the other. The passage runs thus:—

"'On the other hand, if an excess of uric acid be separated by the kidneys, it will act on the phosphate of soda of the double salt, and hence, on cooling, the urine will deposit a crystalline sediment of acid sand, very probably mixed with amorphous urate of ammonia, the latter usually forming a layer above the crystals, which always sink to the bottom of the vessel.'

"Here again we are met by the difficulty, that uric acid, being secreted in the soluble form of a urate, cannot act on the phosphate of soda in the manner suggested. If the action were to take place in the blood, the phosphate could not remain acid, and, therefore, could exert no influence on the urate after secretion. But the most remarkable part of the matter is, that an explanation has been attempted

of a fact which does not exist. If any one has ever seen uric acid fall down in any urine on mere cooling, as it does fall down from its artificial solution in the phosphate, he should not omit to publish the fact. I for one never have met with it, nor have any such facts been brought forward by the originator and propagator of that theory, nor by any one else, as far as I am aware. If uric acid is ever formed in that way, it must redissolve on restoring the temperature of the body to the urine. Thus Dr. Golding Bird has defeated his own theory, in unmistakeable words, in § 120, p. 122.

"*Diagnosis of uric acid deposits.*—When heated in the urine, the uric acid deposit does not dissolve; the crystals merely become opaque. They generally become more distinct from the solution of the urate of ammonia, which is frequently mixed with them, and sometimes completely conceals them from view. Hence the best mode of discovering this deposit is to warm the urine, when turbid from excess of urate of ammonia, in a watch-glass; the acid becomes visible at the bottom of the glass, as soon as the urate dissolves.

"Thus an imaginary fact, linked to reality by mere analogy to an artificial chemical process, has been the subject of explanations, which in improbability were only surpassed by what they were intended to explain, and which found their strongest contradiction in the very fact, the misconceived occurrence of which was the problem to be solved."

Whilst agreeing with Dr. Thudichum as to the number of conditions of the system under which may occur a deposit of urates, we still think that his summary of the pathological value to be set on these deposits is far too brief. In many diseases their appearance in the urine may be looked for as a salutary crisis. To support this view, we can refer, not only to the popular belief on the subject, but to the most practical observations of Becquerel and Schönlein. The value of this and other deposits as a prognostic in fever is also ably put by Dr. Corrigan in his observations on this disease.

We, in common with many other observers we suppose, have met with uric acid deposits, where, from *mechanical* causes, the urine was of so irritating a character as to give rise in its emission to most distressing symptoms; in more than one instance inducing in the patient's own mind suspicions of his being threatened with gonorrhœa. The chapter winds up with some valuable observations on uric acid calculi, including some very interesting suggestions as to the manner in which alternating layers of uric acid and urates may be formed.

The sixth chapter is devoted to the consideration of uræmatine. In it we have a very interesting *resumé* of Professor Vogel's labours on the same subject, and, in connexion with it, a very beautiful plate to illustrate Vogel's table for the de-

termination of the quantity of uræmatine in the urine. The value of this table is fully explained, and it is not Dr. Thudichum's fault should his readers fail in comprehending the indications to be derived from comparisons between the tints in it and in urine. The entire chapter will well repay perusal, but our space will not permit us on this occasion to do more than recommend such perusal to our readers.

Passing over some of the following chapters, we come to that devoted to the means of establishing the presence of albumen in the urine. The existence of albumen in this secretion, though occurring under many circumstances, is not now-a-days looked on invariably as so grave a complication as it used to be formerly; still, it must always, for many reasons, arrest our attention, and excite our interest. It is true, that cases have occurred where albumen has been detected in the urine of persons otherwise in apparent health, and whence after some time it has disappeared without any further lesion; still, if we cannot assign any reason for its presence, we must look on such a case with suspicion. In addition to the usual tests to indicate its presence, Dr. Thudichum strongly recommends a modification originally suggested by Heller. This test is so delicate in every case of application, that we extract it:—

"A small conical glass is filled to two-thirds of its height with urine, and some nitric acid is then allowed to flow along the wall of the glass towards the bottom, where it collects. It mixes with some urine, and forms a clear reddish, mostly dark stratum of fluid. If albumen is present, there will be, lying immediately on the acid, a turbid layer of a precipitate, so strongly distinguished both from the acid and the supernatant urine, that it cannot easily be overlooked. When the amount of albumen is very small, the precipitate sometimes appears only after a few minutes, or becomes more distinct; but, after standing longer, it diffuses in the fluid. But in most cases it appears readily and distinctly."

In his remarks on the pathological indications of albumen, Dr. Thudichum makes allusion to some of the diseases in which it may present itself to our notice, but we for ourselves must say that here again we look on his observations as being entirely of too brief a nature. To dispose of the urinary pathology of the diseases known popularly to us as Bright's disease, in a few lines, can scarcely be regarded as sufficient justice to so interesting a subject. The important relation that the specific gravity of the urine bears to the quantity of the albumen contained in it is not alluded to, and many other points connected with this subject might with advantage have been entered on.

The following passage, bearing on one of the prevailing hobbies of the specialists of the present day, will be found in the chapter on spermatorrhœa, and deserves well the attentive consideration of every one who is opposed to quacks and quackery, under whatsoever guise it may present itself. There can be no doubt of it, but that a large and lucrative practice is derived from the treatment of diseases which, according to Dr. Thudichum, have no existence; and if he could relieve the minds of the victims of this worst kind of charlatanism by demonstrating that their maladies exist but in their own imagination, he will have done good service to a wide section of humanity at large. We believe that the amount of imposition and extortion carried on by the advertising fraternity is incalculable, and that the domestic misery entailed by them exceeds the belief even of the most credulous. He states that—

"Excluding the habitual emissions during sleep of persons affected with spinal disease, an ailment called spermatorrhœa has no existence. The few honest practitioners who believe in the existence of such a disease are the credulous victims of onanists, who find it a strange satisfaction to seek relief and undergo all sorts of treatment for a supposed ailment, the continued cause of which they themselves knowingly are. I will exempt some cases, in which the victims of this vice think that medical treatment might heal them of their bodily passion, as they erroneously believe it to be. I make this statement in consequence of the confession of a young man, which he made to me and the clergyman in the hour of his death. This confession opened my eyes regarding these cases; and I have since that painful experience seen several cases, in which the complaints of spermatorrhœa and nightly involuntary emissions, on close examination, resolved itself into a continuance of guilty acts of the individual."

We must now, most reluctantly, close our remarks on Dr. Thudichum's work on Urine and Urinary Pathology; many more topics remain well worthy of comment and study. To say that it gives us a full history of all that is known of the chemistry of this fluid, is but doing it simple justice, and the pathological remarks are worthy of the reputation its author has already gained in the scientific world. Were we allowed to give a suggestion, it would be this, that in any future edition English weights and measures should be employed, as well as French ones. It is true that he has given us a most admirable table for the conversion of one scale into the other, and, in many instances in the text, has adopted both methods; still, in the hurry of professional avocations, the practitioner will not find time to refer to this scale, and he consequently in

many cases will read numbers that convey no value to his mind. These remarks we make, fully impressed though we are with the superiority of the French system over our own; but as yet it has not been sufficiently adopted amongst our *readers* to render it immaterial which scale be adopted by authors.

We should not have adequately discharged our duty either to the author or our readers, did we not draw attention to the beautiful plates at the commencement of the volume, designed to illustrate his observations; they are worthy of the letter-press, and that is giving them the highest meed of praise at our command.

De L'Alimentation et du Régime. Par JACQUES MOLESCHOTT, traduit de l'Allemand sur la 3e édition, par FERDINAND FLOCON, et revu par l'auteur. Paris: Victor Masson. 1858. 18mo, pp. 287.

The Chemistry of Food and Diet, with a chapter on Food Adulterations, &c.: being a translation of "Lehre der Nahrungs Mittel fur das Volk," by PROFESSOR MOLESCHOTT, of Zurich. By EDWARD BRONNER, M.D. The Chapter on "Food Adulterations," by JOHN SCOFFERN, M.B. London, 1856; pp. 124 (constituting a portion of "Orr's Circle of the Sciences").

THE work of Moleschott on Food and Diet has been for several years the standard popular book in Germany on the subjects of which it treats. Rarely indeed have these matters been dealt with in a manner at once so scientific and agreeable. Herr Moleschott is no mere popular writer, satisfied, like the majority of such authors, with an imperfect acquaintance with the actual state of physiological and chemical knowledge; on the contrary, he has studied profoundly the whole subject, and has committed to the world a more serious and extended work, addressed to the initiated. But the author has known how to adapt himself to the wants of the popular reader, and has comprised in his *resumé* just that which is at the same time the most useful and the most interesting part of his inquiries.

The English translation of an early edition of his popular treatise appeared in "Orr's Circle of the Sciences" in the course of 1856, and obtained considerable notice; but, unhappily, the very best treatises, when forming part of a long serial work, are apt to be forgotten amid many of smaller value, and rarely

attract the attention which their intrinsic excellence would command if standing on their own separate merits. This translation does not appear to have been grateful to the author, as he very pointedly disclaims all co-operation with it, in some prefatory observations of a complimentary nature relative to his French translator, M. Flocon.

The book is essentially inscribed to the people,—but in a preliminary letter it is also especially dedicated to the author's father, in a few sentences of charming grace, and filled with filial gratitude. The dedication is the more interesting as the death of Moleschott the elder, during the printing of the third German edition, served but to add another and more painful souvenir to the early pages of the son's production.

It is essentially didactic in form, without the slightest tinge of the controversial spirit. The authors who have contributed to the several branches of his subject are not alluded to by name; Herr Moleschott has exercised a sound discretion in adopting this course. Nothing so much repels the lay reader of a popular treatise, as an elaborate display of authorities—more often so displayed to feed a vulgar vanity of erudition than to serve any really useful purpose. "For the people," as is justly observed by the author, "the value of the individual disappears; and the most glorious recompense of the *savant* is to see his discovery become the property and the interest of all."

In the first book a solid foundation is laid for its subsequent portions, in a condensed and extremely well digested account of the general physiology of assimilation. Its different sections take up in order the formation of blood; the alimentary principles; digestion; the chyle; the blood; the formation of the solid parts of the human body; secretions; excretions;[a] hunger and thirst. There is but little in this part of the work to challenge the special notice of the scientific reader, although admirably designed for the instruction of the people. The knowledge of the author shines out in every sentence, we had almost said in every word, and only those well versed in the present condition of the physiology of digestion and assimilation can appreciate at its proper value the excellence of his summary of the leading facts of the science.

The first sentence of the introduction claims a no undue importance for food in animal life, and is well calculated to arrest the eye of the reader:—"Food has changed the wild cat

[a] In the Table of Contents of the English translation this word has been unfortunately miscalled "concretion."

into the domestic cat. The carnivorous animal, with short intestine, has become, by long-continued habit, a totally different being, with a long intestinal canal and capable of digesting vegetables, with which it could not be fed in a state of nature." Moleschott pleasantly draws attention to the salutary animation produced by tea, the agitation often set up by too strong coffee, and observes upon the profound depression of vital power resulting from deficient food. How much, he says, of noble poetry has obtained its inspiration from generous wine; or, we may add, from well-mixed whiskey, such as Christopher North both praised and drank. The time has long since past when the mind was believed to be absolutely independent of matter; and the time will soon pass away for ever when it is considered a humiliation for it to be dependent upon the constitution of things around us. Rather, as the author eloquently declares, "we ought to endeavour to enlighten ourselves upon that necessary series of links between eating and drinking, and the formation now of bones,—now of muscles,—now of brain. The noblest privilege of our brain is the power to comprehend this transformation; and it is by its powerful development that the human intelligence can arrive at that degree of illumination at which it will honour the matter which produces these organs, and when it will see, in the necessity of eating to live, no humiliating dependence. That connected chain of relations by which our body lives again in the adornments of the garden—and the flower of the field in the organ of our thought—has nothing in itself to revolt us." We commend these thoughts to Mr. Hayward, when he brings out a new edition of his witty essay on the "Art of Dining." The pleasant mock gravity with which he has treated so gracefully the subject of eating will not suffer by their addition; while they may, perhaps, give a zest to that excellent dish of light reading, which no other condiment can efficiently supply.

We subjoin the following account of secretion in its general relations, as furnishing a good specimen of the author's mode of description:—"All the functions which are connected with the development of the solid parts of our body are designated by the physician as nutrition, properly so called. But we must not regard all the substances which transude from the blood through the capillaries, as aiding in the manufacture of the solid structures. A very large part of the transuded materials is not a nutritive juice for the tissues, but remains in the liquid form, which, extracted from the blood, or prepared at its expense by special organs, is collected in reservoirs, and poured into the cavities of the body, or expelled. Often these reser-

voirs are only canals, which are termed the excretory conduits of organs, while these latter themselves are named glands. In other cases these modes of issue conduct the liquid, before being finally carried away, into cavities of one form or another, and which are denominated vesicles or bladders. Thus there is a seminal vesicle, a gall-bladder, and the urinary bladder. The liquids extracted from the blood, and collected by the glands, have, in part, a special and immediate utility in the body, insomuch as they aid in the functions of reproduction and digestion ; all those fluids, which co-operate in these two functions, so important as regards both the individual and the species, are united together under the name of secretions. In all secreted fluids there is a quantity of water more or less great; water is the principal condition of all transudation."

In his discussion of the various fluids engaged in the digestive process, the author states that both the mucus poured out from the buccal membrane and the proper salivary fluid secreted by the salivary glands, possess an alkaline reaction; and yet, that the liquids of the mouth often give an acid reaction. We believe this latter statement to require some qualification, for the general belief among physicians tends rather to the conclusion that when this important fluid exhibits a distinctly acid reaction, the subject is not in a state of health. It is probable that the presence of particles of food for a lengthened period in the mouth may affect the reaction of the saliva. But this subject requires further investigation, and particularly in reference to the difficult question of the cause of dental caries.

A succinct but thoroughly intelligible description is given of the function of the lungs, quite freed from the hypothetical treatment to which the respiratory function has been generally subjected of late days by chemists, but presenting only what may fairly be termed positive facts. It is remarked that just as the ovum offers to us a transition which connects the secretions with the tissues, the lungs present an organ whose function takes a middle place between assimilation and excretion. The excrementitious substances which it abandons are carbonic acid and water. "In exchange it receives oxygen. Without oxygen, there is no arterial blood; without arterial blood, there is no nutrition. If this is wanting, all the functions of all the tissues are deranged. The muscles can no longer contract, the nerves lose their irritability, the operations of the brain are disturbed, if the blood ceases to furnish to these organs their particular combination. All that depends on the provision of oxygen."

In the fifth chapter, on "hunger and thirst," Moleschott

shows how vain was the task of the cruel miser in the fable, who wished his horse to live on nothing a day, and find himself in bone and sinew wherewith to labour; and who imagined he had almost accomplished his task, when the hapless beast fell into the knacker's hands. When the total amount of excretions diminishes, the weight of the aliments which we take diminishes also. If this statement could be reversed,—if it were true that a diminution of excretion corresponded exactly with a diminution of food, we might learn to walk on without aliment, and the moral of the fable might have been changed. But it is not so. If we abstain completely from food and drink, we, nevertheless, exhale carbonic acid and water; the evacuations of urine and excrements take place after, as before, such abstinence. The hair grows, the nails elongate, sweat and mucus continually take away from the body its essential substance. All this, and much more to the same purport, are admirably laid down by the author, and the whole is summed up by the just observation that alimentation may be correctly styled a process of reparation.

In the sections on the results of want of food, the powers of the author are favourably displayed. He draws attention to the diminution in weight of the different parts of the body, and remarks on the very small effect produced on the bulk of the nervous system by starvation—in accordance with the well-known researches of Chossat. He states that probably the comparative maintenance of the weight of the nervous system is owing to its having fed upon the fatty and albuminous parts of the body itself, rather than to its remaining in an actual *status quo*, while other structures are undergoing so remarkable a diminution. This opinion appears to us well based.

M. Moleschott concludes this part of his essay with some general reflections on the effects of starvation, written in a spirit at once of sound philosophy and genuine philanthropy. The French translation here presents to the reader a goodly number of very significant stars, indicative of a chasm, and painfully reminding us of a règime which permits not the telling even of scientific truths, when they are tinged with the doctrines of progress; or hint, however obliquely, at political eventualities. Out of the following extract from the English translation, one sentence only can be found in M. Flocon's book. In fact, these sentences contain a singularly exact and tersely expressed view of the social doctrines of which Louis Blanc, the well-known enemy of Louis Napoleon, is the most able and honest of living advocates:—

"There is another instinct by which the vigour of the mind is vanquished in a more melancholy way—hunger desolates both head and heart. Though the craving for nutriment may be lessened to a surprising degree during mental exertion, there exists nothing more hostile to the cheerfulness of an active, thoughtful mind than the deprivation of liquid and solid food. To the starving man every pressure becomes an intolerable burthen: for this reason hunger has effected more revolutions than the ambition of disaffected subjects. It is not, then, the dictate of cupidity, or the claim of idleness, which prompts the belief *in a natural human right to work and food*[a],—a motive to the force of which Christian charity itself must, sooner or later, give way.

"All honour, indeed, to the charity which in so many noble-minded people anticipates and mitigates the sternness of law. I am, indeed, far from retaliating the contumacious censure with which the assertors of this right are often met by their opponents. It is the part of wisdom and comprehensive tolerance fairly to balance the merits of all opinions, and to do justice to their respective beneficial results. So much the more, however, do I consider it a duty to oppose the cogent power of convincing facts, to the rigorous sentence which makes a human right dependent upon a human grace."

The second book sets out with a definition of alimentary principles and nutriment. The author shows that as hunger and thirst are the sensations which announce to the brain, through the medium of the nerves, the impoverishment of the blood, popular language calls every substance a nutriment which is able to quench hunger and thirst; while the scientific definition of nutriment results rather from a consideration of the cause of these sensations. But it is necessary to draw a distinction between "alimentary principles" and aliments, for while all the former may be divided into the three orders of inorganic, organic without nitrogen, and organic with nitrogen, aliments, on the other hand, containing various alimentary principles, cannot be classified in a similar manner on any defined chemical basis. In this difficulty, Herr Moleschott prefers the common division of solid food, liquid food, and condiments. The inherent difficulties of any classification, even among such familiar objects, are sufficiently apparent at a glance of the pages in which they are described. The author himself remarks on the narrow line of demarcation between solid and liquid food, and upon the important consideration standing at the basis of the matter, that there is only one alimentary principle, namely, water, which affects that condition of the blood which brings on thirst; and that, as water forms

[a] The italics are our own.

a very large proportion of all solid matters, so there is also no liquid ingested by man which does not include a more or less considerable amount of solid matter. But this is not the only stumbling-block, for under the head of condiments we find mentioned sugar, butter, and cheese. There are, undoubtedly, good reasons for placing those substances in this position, for their common employment suggests to us the idea of a condiment rather than of a food, and the author has not failed to bestow due attention on the principles involved in them, in other sections. As "tests of digestibility," we are told that the more easily these alimentary principles are dissolved in the digestive fluids, and transformed into the constituents of the blood, the greater is their digestibility: for digestion consists, not in the solution only of bodies, but also in their transmutation into the essential constituents of the blood. Both conditions are of equal importance. Again, the "tests of *nutritiveness* (a quality of food so often confounded with digestibility) comprise this latter, the quantity and the proportions of the alimentary principles contained in any given article. Digestibility merely expresses the *rapidity* with which *the alimentary principles* of the ingested material are transformed into constituents of the blood; nutritiveness indicates the *quantity* of alimentary principles conveyed to the blood by solid or liquid food. Hence it follows, that the idea of digestibility is equally applicable to alimentary principles and to aliments, while we can only speak of nutritive value in reference to these latter.

In the section on "solid food," meat and eggs, the constituents of beef, the effects of cooking, and the differences of taste of various kinds of meat, are briefly mentioned. The observations on cooking are based on the researches of Liebig, and cannot fail to be useful to the careful reader. It is lamentable to think how seriously ignorance of the first principles of the art of cooking affects the national purse and the national health. British cooking, in its present condition, may be not unfairly designated the art whereby we are compelled to eat what should be thrown away, and throw away what should be eaten—surely, the bathos of all possible cooking! It is pleasant, amid the actual experiences of every-day life, to find that a scientific foreigner can find something to praise in the English labourer's roast beef. The author rightly insists, too, that the "portable soup" cakes of England, "which excels all other countries in the preference of its people for a substantial nutriment," are vastly different, and infinitely more valuable than the so-called bouillon-cakes of France, which are, in fact,

gelatine only, while the corresponding cakes of this country are prepared from the broth of meat inspissated by boiling to a jelly. These latter very justly claim for themselves the appellation of "portable soups." The long night of the cook's art seemed recently likely to be illuminated by the energetic and wisely-directed efforts of M. Soyer, but the premature death of that excellent cook and clever writer has thrown a gloom over the kitchen which no living Englishman will probably dispel, and has effected a great rise in the value of bad soup-stock, hard peas, and tough legs of mutton.

There are some interesting observations on the causes of the comparative qualities of flesh, and some of them are new to us. M. Moleschott leans to the belief that the characteristic tastes of the various kinds of flesh are due to the special foods of the animal; and, in confirmation, alludes to the taste of field-fares after eating juniper-berries; and that of some ducks and other aquatic birds which feed on snails, crabs, and fish, and whose flesh resembles train oil. "In Tahiti, too, the swine were fed on fruits only, and while their fat had nothing of the rich taste of European pork, Forster compared their flesh with veal." We are sorry to hear that any process of feeding can impair the flavour of our much-loved porker, for which we confess to the same attachment as Charles Lamb; but console ourselves with the reflection that possibly Forster's stomach might have been disordered by his long voyage, or his porcine reminiscences dimmed by distance. Mayhap, too, the non-existence, at the time, of a calf on the island might have forbidden the opportunity of comparison, so necessary in all inductive investigations. If the Tahiti pork really tastes like veal, we are only sorry that Queen Victoria and Louis Philippe so nearly came to blows over so worthless a quarter. We are quite at a loss to imagine how the author can fancy that our being able to fatten animals at pleasure, by administering to them fat materials, constitutes a scientific demonstration of the dependence of the special quality of flesh upon the food eaten, and we desiderate further proof before we can assent to the statement that "partridges lose their taste if cooped-up and fed like domestic fowls." The fact rather appears to us, that every animal has his own taste, just as he possesses a peculiar smell, or a characteristic form. It is one of the inscrutable mysteries of nature, and designed, perhaps, in part to gratify that love of variety which exists as a genuine physiological condition in man, and possibly in the beasts. Although the wolf seems to have an indiscriminate love for the flesh of kids, lambs, and various other young animals, we have no doubt that he exactly appre-

ciates the peculiar merits of each. At any rate, if he does not, our respect for him is diminished.

The articles on bread and cakes, and the composition of the cerealia, abound in useful information. Unhappily, science and experience are too often divorced, instead of being united in bonds of mutual assistance; though the first indications of improvement in this particular have already appeared in many parts of these countries. Assuredly the earth will not yield its produce to the extent decreed by Providence, until that same intelligence and earnest skilled labour which have effected so much in other industrial arts have thrown their rich treasures into the lap of the farmer. "If we consider that the breeding of cattle and agriculture are among the most ancient pursuits of mankind, we must not be astonished that, in the methods of increasing the produce of both, experience had anticipated science by some thousands of years. In many cases, therefore, nothing was left to the latter but correctly to interpret the results of the former, and explain its principles. Often, too, the scientific explanation of a customary practice has proved the safeguard against those errors, which would have been sure to arise in reasoning from solitary instances experimentally established, without the sure ground of a general principle. If the agriculturist were but ready to acknowledge the services of the chemist, and the latter willing to co-operate with the former, then the power of mind and that of the purse, which have, in fact, but one common object in view, would not divide their forces; but to the obstinate pride of the theorist, who seeks to overthrow all that agricultural experience has established, there is only too often opposed the equally obstinate narrow-mindedness of the agriculturist, who has no faith out of the circle of his experience, or beyond the limit of his fields; the one forgetting that old customs have been confirmed by new reasons, at least as often as they have been laid aside."

After a discussion of "roots," vegetables in general, potatoes, which contain a larger proportion of potash than of all other inorganic constituents put together, and fruits, we arrive at the section on "liquid food." If life is an exchange of substances, liquid is for life an indispensable condition. For the composition and decomposition which give activity to the substances of our body are not possible without water. Thus the simplest of drinks is also the most necessary of all. Our drinking water is the liquid which contains the greatest proportion of nutriment; for is that not a nutriment which conveys to the blood the substance that renders possible the motion of all other

combinations? It is interesting that phosphoric acid never forms a constituent of water; so that this all-important ingredient of our body is exclusively obtained from our solid food[a], and chiefly from the cerealia. The qualities of milk are duly enlarged upon, and the characters of human milk contrasted with those of the corresponding secretion of cows and asses. The author broadly lays down that he considers "the health of the child (at the breast) to constitute the surest and largest experience which enlightens us as to the right composition of the solid and liquid food which man has to take." Few will dispute this dictum, and it were well if mothers appreciated it a little more correctly. Tea, coffee, and chocolate, are then noticed, and their general effects accurately described, though we think the author would have done well to allude, however cursorily, to their effects, as accessory foods diminishing the waste of the body. He states that "at Constantinople the first coffee-houses were called schools of knowledge. Poets and sages assembled there—their discussions and decisions alarmed, more than once, the holders of power. The priests compelled Mourad XI. to see a danger in those assemblies, and the fear of the priests, ever the faithful allies of despotic arrogance, made him close the so-called schools. A similar fate befel, in the seventeenth century, the London coffee-houses,—but a habit grows by prohibition: decrees can reform States, but they are impotent against society. Social revolutions are not arrested by force, because force cannot accomplish them." Moleschott is in error in supposing that coffee-houses, as such, were ever put down either by law or prerogative in this country. That the Liberal leaders often frequented these places of resort is certain —and that they were often arrested in their favourite haunts is equally certain—but coffee-houses were not destroyed by the Government. The truth is, a "social revolution" annihilated their power. It became more fashionable to drink coffee at home than abroad; and the society of well-bred ladies gradually disarmed the fascinating influences of tavern eloquence. Men desirous of talking politics found other vents, and the general spread of newspapers furnished topics for every fireside.

Alcohol, in all its forms, receives a due share of attention, and we are glad to find that the author does not share the too common mania of the time against even the temperate use of stimulants, and does not hesitate to say that we morally vilify a man by refusing him a source of pleasure, to prevent him

[a] Milk is, of course, an exception to this statement.

succumbing to brutal appetites. "The divine who demands a vow of continence does not more revolt against true humanity, than the physician who proscribes alcohol because it can cause drunkenness. Goethe has given to the modern world the beautiful device, 'Think how to live.' He who preaches abstinence from alcohol takes us back to the Christianism of the middle ages, in which the maxim, 'Think how to die,' stifled the fairest flowers of humanity."

The section on "condiments," though brief, is highly interesting, and the remarks therein contained, on sugar, appear to us so important that we transfer them *in extenso* to our pages. "As by salts and acids, so likewise by sugar and honey, is the quantity of the digestive juices increased, and the digestion promoted. And the sugar, while being digested, enriches the gastric juice with a substance which assists in dissolving the aliments; for the sugar, on coming into contact with the saliva, has been partly transformed into lactic acid, which acts upon the alimentary principles in the same manner as does the hydrochloric acid of the gastric juice.

"For this reason, sugar at once appears infinitely better than its reputation. Since the composition of milk has been recognised, sugar ought to have been acquitted of the bad repute which adhered to it for many centuries. A slander always leaves something behind; and even to the present time the popular belief that sugar injures the teeth is as widely spread as, on the counter testimony of both experience and science, the opposite doctrine ought to be; for the teeth of the negroes in the West Indian colonies are of a bright white; and that which is thus proved by a whole community remarkable for the abundance of sugar consumed among them, the example of many individuals nearer home amply confirms. Phosphate of lime is the chief constituent of the bones and teeth from the time of adolescence, and the development which the bones of children have to undergo consists particularly in an augmentation of this phosphate. Lactic acid dissolves the phosphate of lime of aliments, and as sugar seconds indirectly that solution, it aids in furnishing to the teeth the great quantity of lime which they need. It will be, doubtless, objected that sugar causes pain in carious teeth. A thousand other substances as well as it irritate exposed nerves; and can we seriously say that what causes suffering to a patient is necessarily injurious to a sound man?

"Let us, then, remove the interdiction which banishes sugar from the little world of children. Far from injuring the teeth, it furnishes lime to them. It is useful to the stomach, because,

taken in moderation, it produces lactic acid. Let us beware of sweetmeats covered with bright-coloured poisons, but leave to children what they love, and to the Christmas-tree its charms."

In the third and concluding book Moleschott discusses "diet" in its general relations to age, sex, state of health and disease, kind and amount of labour, and to the variations of seasons. This is perhaps the most elaborated, as it will be undoubtedly the most popular, part of his treatise. There is no book in the English language where so much that is true and important on these subjects is treated half so effectively as by our author. The dietetic treatment of infant life is particularly worthy of notice; and chemical science is clearly shown both to confirm and harmonize with the results of experience. The whole of the book is written in excellent taste, and at its conclusion he avers his conviction that, however useful a treatise on food for the healthy may be to the people, one which should attempt to give minute rules for the selection of food, beverages, and condiments in disease, would only do mischief.

"Such a description," he says, "would require so thorough a scrutiny of each particular case, with so detailed a consideration of the condition of the body, that either superficiality would annihilate its value, or profundity destroy its clearness. Only the man who has devoted his whole life, with all his powers of sense and thought, to the investigation of the condition of man in health and disease, can unite with the necessary knowledge the more subtle, discriminating judgment essential under such circumstances. Render, therefore, to the medical man that which is his, yet without neglecting, for the healthy state, the study of those rational rules of life which are given by science—for man is only obedient to such laws as he understands."

Such opinions, so well expressed, only compel us to admire Moleschott, both in what he declares, and what he suppresses. He has, indeed, displayed a discretion which our own popular writers would do well to imitate. All attempts to instruct the people in the management of disease have ever been failures, and such they must remain; though we do not cherish the hope that authors, whose only end is self-seeking, will derive any benefit from the futile efforts of their predecessors.

We need scarcely give a formal opinion of the merits of this treatise after so extended a notice; and our analysis will

furnish a better basis for the formation of a judgment on the part of the reader, than any praise we can bestow. But we are well assured, that no physician can read it without pleasure, and no educated man without deriving valuable hints for his guidance in reference to the matters of which it treats.

Sur une Fonction peu connue du Pancréas. La Digestion des Aliments Azotés. Experiences paralléles sur la Digestion Gastrique et Intestinale: Inductions Cliniques. Par Lucien Corvisart. Paris: Masson. 1857–1858. 8vo, pp. 123.

The author of this publication is already favourably known to the profession by his contributions to the periodical literature of our Continental neighbours, as well as by his more systematic writings on subjects closely allied to that of the present memoir. We more particularly refer now to his "Études sur les Aliments et les Nutriments," and his work "De la Dyspepsie et de la Consomption et de l'emploi de la Pepsine en Thérapeutique;" in both of which treatises he advanced views characterized as well by their novelty as by their ingenuity, and to establish which he instituted a series of experiments, to the results of which he alludes in the pamphlet now before us.

To enable our readers more thoroughly to understand the views advanced by Dr. Corvisart in the treatise which is the subject of these remarks, we shall take a hasty retrospect of the views hitherto entertained by physiologists on the part played by the pancreatic secretion in the digestive process. Passing over that period of chemical history in which the pancreatic fluid was, in general terms, described as being similar to the saliva we find amongst the earliest investigators into its nature the names of De la Boë and De Graf. They described it as being a clear and viscid fluid of an *acid* reaction, and of a saline or acid saline taste. Wepfer, Pechlin, and Brunner described it as being of a turbid whitish colour, *not acid* in its reaction, and of a saltish taste. Mayer first stated its reaction to be alkaline, and announced in it the presence of albumen, chloride of sodium, and a peculiar animal matter, statements subsequently corroborated by Magendie.

Tiedemann and Gmelin examined the pancreatic secretion in the dog and sheep, and stated, as the result of their experiments, that the portion of the secretion first obtained was slightly acid, whilst that which flowed subsequently was decidedly alkaline, and richer in albumen than that first obtained (a fact which

explains the apparent discrepancy between the statements of De la Boë and Mayer); the result of their analyses is as follows:—

	In the Dog.	In the Sheep.
Water,	917·2	963·5
Extractive matter and salts soluble in alcohol,	36·2	15·5
Caseous matter and soda salts soluble in water,	15·3	2·8
Albumen and salts,	35·5	22·4

Professor Frerichs has also examined the pancreatic secretion with great care, and has established many interesting facts in connexion with it, not the least important of which is the power which he demonstrated as existing in it, of converting amylaceous matter into sugar, a property shared with it by the saliva, as pointed out by Leuchs. His analysis, as being the most recent one we have, is introduced here; it will be found to vary from Tiedemann and Gmelin's in some important particulars:—

Water,		986·40
Solids,		13·60
Fat,	0·26	
Alcoholic extract,	0·15	
Watery extract (albuminous),	3·09	
Alkaline, Chlorides, Phosphates, Sulphates,	8·90	
Carbonate and phosphate of lime and magnesia,	1·20	
	13·60	
		1000·00

The physical characteristics of the pancreatic secretion have been at different times described by Frerichs, Schmidt, Bernard, Lehman, and others, and their description only differs in minor particulars from each other. Schmidt examined this secretion in the dog, and describes it as being a perfectly clear, limpid, colourless, transparent, viscid, ropy fluid, in which the microscope could detect no particles of any kind; he states its reaction to be strongly alkaline, and that, on the addition of alcohol, it forms a milky white coagulum, which precipitates in thick white flakes, having a supernatant fluid, clear in colour, and strongly alkaline in its reaction. These flakes, if caught on the filter and dried, are capable of being again dissolved in water, and of thus forming a solution resembling in its consis-

tence the original pancreatic secretion. Exposed to a strong heat, they leave behind traces of carbonate of lime. The supernatant alcoholic solution, on evaporation, yields a colourless albuminate.

It is also coagulated by heat, the mineral acids, metallic salts, and pyroxylic spirit. It is not coagulated by dilute acetic, lactic, or hydrochloric acids; alkalies do not precipitate it, but, on the contrary, redissolve what is thrown down by heat, &c.

The specific gravity of the pancreatic fluid is stated by Schmidt to be about 1·031; whilst Lehman states it to range from 1·008 to 1·009; at a high temperature it rapidly undergoes decomposition, losing its property of coagulating; not so at a low temperature; under such circumstances it may be kept many days without undergoing any change. Recently procured, it is odourless, of a slightly saline taste, and becomes frothy on agitation.

Having in this very cursory manner disposed of the chemical history of this fluid, we come to consider the physiological uses that have been assigned to it, the most important of which we shall enumerate in chronological order, viz:—

a. To neutralize the acidity of the gastric juice when it arrives in the duodenum.

b. To act as a diluent of the bile.

c. To assist in the conversion of amylaceous matter into sugar.

d. To saponify the globules of fatty matter found in the chyle.

e. To convert the bile into insoluble products, and thus assist its elimination from the system.

The first two of these we can easily imagine to have been deduced from the similarity existing between this fluid and the saliva; the third and fourth, as being the subject of most elaborate research on the part of Frerichs and others on the one hand, and of M. Cl. Bernard on the other, require a more extended notice at our hands; but to enable such of our readers as have not kept themselves *au courant* with the physiological chemistry of digestion, to enter fully into the question at issue, we shall first venture on what may to other of our readers appear as a very unnecessary description of elementary subjects in connexion with the physiology of digestion.

Albumen and albuminous matters, when ingested into the system, and subjected to the process of digestion, undergo decomposition, and are converted into a substance termed albuminose. Albuminose differs from albumen in not being pre-

cipitated by heat or nitric acid. Alcohol precipitates it, but the precipitate so formed is redissolved by water. It resembles albumen in being precipitated by creasote, tannin, and the metallic salts. Mialhe states, also, that albuminose traverse organic membrane with facility, but that albumen does not; a point of great interest when considered in connexion with the subject of albuminuria. Albuminose through the agency of the solvent fluids of the stomach, is resolved into new definite compounds, termed peptones; the power of *converting* albuminose into these compounds is due to the pepsine, whilst the solvent power is attributed to the acids existing in the stomach. These remarks apply also to gelatine, fibrine, &c.; with which substances peptones are formed in a similar manner.

Eberle, in 1834, described the power possessed by the pancreatic fluid of emulsifying fatty substances, but M. Cl. Bernard has, more than any other investigator, associated his name with these reactions—his experiments on the pancreatic secretion have been made both in the animal economy, and external to it. However, neither Eberle nor Bernard is entitled to the merit of originality in this discovery; it had been to a great extent anticipated by a pathologist of whom British science has just cause to be proud, Dr. Bright. In 1832 he read a paper before the Medico-Chirurgical Society, which he published in the following year, and which will be found in the eighteenth volume of the Transactions of the Society, on Diseases of the Pancreas and Duodenum—in which he drew attention to a peculiar form of oily or fatty substance which he found in the fæcal evacuations of some patients labouring under cancerous affections of these parts. It is true that he instances other cases of a similar kind where this phenomena was not witnessed; still, the germ was there, and had these forms of disease been more numerous in practice than they are, he would have established another pathological fact, sufficient to secure for him a bright niche in the Temple of Fame. One passage from this paper (which is throughout a model for sound inductive reasoning) will justify our claim for Dr. Bright of the merit of, at all events, *initiating* the inquiries that Dr. Bernard has worked out with such zeal and ability. It is this:—"It may, indeed, at last prove that the appearance to which I have been alluding is but the result of ill-digested aliment; but even in that case it will be very important to ascertain this fact." Coupling this passage with the following, it will be seen how near he approached to Eberle's discovery:—"We bring the circumstance of the diseased structure in connexion with this symptom within a narrow limit—*disease, probably malignant,* of that part of the

pancreas which is near to the duodenum, and ulceration of the duodenum itself. These are the only two conditions which can be traced as being peculiar to all these cases."

To return now to M. Bernard's experiments: we shall first briefly describe those he made with the pancreatic fluid, a portion of the pancreas itself, or an infusion of the pancreas, and neutral, oily, or fatty substances. In all cases he found the substances so operated on were emulsified, or, in other words, that by the action of the pancreatic secretion the globules of oil were suspended in this aqueous menstrum, and that they continued in this state for fifteen or eighteen hours, even if exposed to a temperature of from 95° to 100° without separation; furthermore, he established the fact that this is not merely a case of simple suspension, but that the pancreatic fluid separated the oily matter into its base and its peculiar acid, so that when operating on butter he was enabled to detect the peculiar odour of the butyric acid thus set free. These experiments have been confirmed by Bidder and Schmidt. He has not been able to prove that this reaction occurs *within* the animal economy, but Lenz, to decide this point, fed cats on butter for some days, then killed them, and though he found the chyle perfectly milky, he could get no trace of butyric acid: so that as far as this experiment goes, we may presume that the negative is the truth.

To decide the influence exercised by the pancreatic secretion within the organism, he tied the pancreatic ducts of a dog, and found that fat passed unaltered through the intestines, and the lacteals were filled with limpid, colourless chyle. He also made the following experiment on a rabbit, having selected this animal in consequence of the pancreatic duct opening some sixteen or seventeen inches from the pylorus. Having kept the animal fasting for some time, he forced some melted lard into the stomach, and then allowed it to eat carrots and parsnips; after six hours he killed it, and found the lacteals between the openings of the two ducts full of a clear limpid fluid, but below the pancreatic duct they were full of a creamy, milky fluid. As the result of these two sets of experiments, within and without the organism, he infers the true use of the pancreatic fluid to be to emulsify fatty matters, and thus facilitate their absorption.

Experiments of a similar nature, with dissimilar results, however, have been made by other parties. Herbert, for instance, tied the two pancreatic ducts in a rabbit, after having kept it for some days without food; he then gave it food, and after some hours killed it, and found the lymphatic vessels of the mesentery full of a milky fluid,—this experiment he re-

peated several times with a similar result. Colin perceived no difference in the digestion and absorption of fat in cows with fistulæ of the pancreas, and in those who had no such lesion. Lenz and others have made similar experiments, all tending to support Herbert's views.

Having thus disposed of M. Bernard's theory, we shall come to consider that advocated by Dr. Corvisart, which is in fact but a confirmation of the view first advanced by Purkinje and Pappenheim in 1836, that the pancreatic secretion was endowed with a power of dissolving nitrogenized, in addition to that previously announced by Eberle, of emulsionising fatty substances.

Dr. Corvisart opens his pamphlet with some well-put observations on the difference existing between the simple *solution* and the actual *digestion* of an aliment, and at the same time places before his readers the purpose he has in view in recording his observations; thus, we read:—

"A substance that is only dissolved can no more be changed in its character than sugar is modified by the action of water; aliments that have been digested have undergone *transformation.*

"Nevertheless when they recommenced in France experiments relative to the emulsifying powers upon fatty substances, they also repeated the operation with reference to albuminous aliments, but they never advanced any accurate or novel series of experiments, nor any other proof of digestion than that of solution; the result of which was that science remained stationnary at that point where Purkinje and Pappenheim had left it, one and twenty years ago.

"To make a step in advance; to indicate what is the nature not only of the solution, but of the transformation which the pancreas effects in plastic aliments; to strengthen the discovery of Purkinje and Pappenheim with convincing proof; above all, to establish upon facts, simple and easy of verification, the relation and the functional distinction between the stomach and the pancreas. Such is the object of this memoir."

Some most practical observations follow, on the folly of valuing the secretion by its amount instead of by its functional activity; he states, most justly, that—

"The abundance of a secretion but indicates the amount of water it contains: its functional energy, which has another source, viz., its active principles, alone indicates its intrinsic value.

"As far as we are concerned, therefore, the amount of its

digestive power over aliments, is the only criterion of the true secreting intensity of the digestive juices."

A little further on he gives us what may be looked on as a formula for obtaining *pancreatine:* a substance in some respects analogous to pepsine, for which the profession is already indebted to him. It is as follows:—

"I proceeded even still further. After having made a prolonged infusion of the pancreas, either of a sheep or of a dog, I dropped alcohol into it, until it ceased to precipitate; I caught the precipitate on a filter, and redissolved it in water; now with this redissolved precipitate I ascertained that the same weight of albumen (about 40 or 50 grammes) could be liquefied.

"Guided by a great number of analogies existing between pancreatine and pepsine, the features of which are described in the course of this memoir, I conceived the idea of precipitating the infusion of the pancreas, as we precipitate the infusion of the mucous coat of the stomach. In this manner I obtained a precipitate composed of oxide of lead and of pancreatine (?); this I decomposed by hydro-sulphuric or sulphuric acid. In this experiment, instead of pepsine, pancreatine (?) was set free in water, slightly acidulated with the acetic acid of the lead salt. Well, this solution, containing the active principle of the entire pancreas of a sheep or of a dog, acid though it was, also liquefied 40 to 50 grammes of albumen."

He next establishes by a series of most conclusive experiments these facts,—first, that the pancreatic juice transforms the white of an egg into albumino-peptone as efficiently as does the gastric juice, and that the resulting peptones are identically similar, in spite of the difference existing between the two secretions; second, that an albumino-peptone produced by the gastric juice is unacted on by the pancreatic juice.

The succeeding eight or nine pages are occupied by an inquiry into the truth of the theory which asserts that the bile, when it meets in the duodenum the results of the process of the gastric digestion, is capable of decomposing and precipitating them. This theory he proves to be founded on error; and he demonstrates by a series of experiments of a most varied character, that it is not any portion of the alimentary substances, but, on the contrary, that it is the bile itself, that is the cause of this precipitation; for the particulars of these experiments, however, we must refer the reader to the pamphlet itself, as to reproduce them here would entirely exceed the limits which we have proposed for these observations.

After some remarks, in each case supported by a series

of most ingeniously devised experiments, as to the action of the pancreatic fluid on fibrine, and its power of producing a *fibrino-peptone* perfectly analogous to that produced by the gastric juice, and demonstrating that to produce this action it is perfectly immaterial whether the secretion be acid, alkaline, or neuter, our author comes to the consideration of one of the most important problems in the entire work, and one having an especial pathological bearing,—the action of the pancreatic upon the gastric juice. Here he establishes a most remarkable law, viz., that these two secretions discharge the same duty in the animal economy,—that of digesting albuminous matters; still, it is essential that they should act apart from each other. Under these conditions, each is capable of discharging its own functions, but, should they come in contact with each other, instead of their power being increased, it will be absolutely destroyed. He proves that the pancreatic juice will dissolve such nitrogenised substances as, escaping the action of the gastric juice, arrive unaltered in the duodenum. He also proves that it has no action on the peptone that is the result of gastric digestion, but that if, by any accident, the two secretions meet in the duodenum, the result will be that they shall neutralize each other; proving thus, as we shall see hereafter, another, and hitherto unsuspected cause, of that hydra-headed monster, indigestion. This fact is so important that we shall give the experiment establishing it in his own words:—

"I took 100 grammes of the gastric juice, and an equal quantity of the pancreatic secretion of a dog, both possessed of an energetic and accurately determined digestive power. I placed them, with some dressed albumen, for six hours in a water-bath; digestion was the result; but the experiment taught me a most unlooked-for fact, that the sum of the digestive powers of the two ferments were not added to each other.

"In fact, in a comparative experiment, I had ascertained that, separately, the gastric juice had produced 5 grammes of albumino-peptone, and the pancreatic liquid, 8 grammes; in other words, a total of 13 grammes of alimentary matter had undergone transformation.

"However, united, the two ferments, placed in the best condition to insure complete digestion, had only produced, according to my experiment, 5·75 grammes."

The means adopted by nature for preventing this *contre-temps* occurring more frequently than it does are thus summed up:—

"There is, therefore, one condition absolutely essential for

the due performance of either digestion; it is, that they should be separated.

"In fact, asunder, the two ferments assist each other; the alimentary matter escapes neither one nor the other.

"But, on the contrary, it escapes them both, should they unite.

"Nature has prepared herself for this conflict in three ways: 1st. By the pylorus, which separates the two digestions. 2nd. By the very act of gastric digestion, which, in producing peptones, destroys the pepsine. 3rd. By the bile, which in its passage destroys the digestive power of this latter."

The relative digestive powers of the two secretions are stated to be nearly equal, as appears from this extract:—

"If we examine the pancreatic secretion superficially, that is to say, in an absolute manner, we would attribute to it an enormous amount of digestive power (in fact, 100 grammes of this fluid digest 200 grammes of fibrin); and in this point of view we would be inclined to consider it as far more important than the gastric juice.

"But if we examine the question in a more physiological manner, we quickly perceive the mistake.

"The stomach, in fact, supplies six times (if not ten times) more gastric juice than the pancreas secretes of its own special secretion: this quantity compensates for the want of concentration in the gastric juice, whilst the small amount of pancreatic secretion is made amends for by the intensity of its ferment.

"We cannot, therefore, be surprised if our experiments tend to prove that one period of pancreatic digestion is capable of furnishing the same quantity of digested aliment as one period of gastric digestion.

"So that the relative power of the pancreas and of the stomach in the digestion of nitrogenised aliments is very nearly equal."

Dr. Corvisart next establishes the power of the pancreatic fluid in assimilating gelatine; proves the action is strictly one of nutrition, and identical with that of the gastric juice, inasmuch as gelatine acted on by the pancreatic secretion is no longer capable of solidifying, no more than it can after undergoing digestion through the agency of the gastric juice. In this chapter he alludes to some interesting experiments published in his work "Aliments et Nutriments," and made with a view of explaining how injections of broth, though not subjected to the action of the digestive juices, could be assimilated, and act as nutriments. This effect he states to be produced by the prolonged digestion of the aliment in the water having

in some degree converted it into a substance resembling albumino-peptone. He acknowledges that this resemblance is very feeble indeed; but if it be at all true, it gives us a most important hint indeed in the employment of such means of support, viz., that broths to be so employed should be subjected to a very prolonged digestion, so as to make them assume more closely the condition they would arrive at were they once subjected to the action of the gastric juice; but even the most prolonged operation of this nature can only approximate the action of nature: one is a vital, the other a chemical action, and a long distance as yet separates these two operations. It is on these grounds alone that we can explain how ineffectual our best-directed efforts are to support the system in this manner; that we may do so for a time is an incontestible clinical fact, but to be enabled to do so for any lengthened period is, we fear, beyond our finite powers.

In the chapter on the pancreatic digestion of muscular fibre, he establishes, by a similar chain of rigorous experiment, the fact that this secretion is able to convert it into musculo-peptone in a manner perfectly similar to that in which it is affected by the gastric juice; and further, that during the period of digestion these two fluids seem to digest each of them an equal amount. He also gives us, as the result of his experiments, a table by which to estimate the digestibility of several alimentary substances in virtue of the relative amount of peptones produced by each. This table we extract, though, even by his own acknowledgment, it will require a far more extended series of experiments before it can be looked on as even approaching accuracy—

TABLE *of the Digestibility of Animals.*

Aliments.	Stomach or Gastric Digestion.	Intestinal or Pancreatic Digestion.	Sum of the two united.
	Grammes.	Grammes.	Grammes.
Albumen, .	6 to 7	7	13 to 14
Cellular Tissue,	6	6	12
Gelatine, . .	12	9	21
Fibrin, . .	15	12	27
Casein, . .	13	13	26
Muscular Tissue,	15	15	30

The practical value of this table is thus stated by Dr. Corvisart:—

"Though I am sure that these figures are not very exact, for this reason, that my experiments have not been sufficiently numerous; still, their examination does not the less yield self-

evident instruction. With an equal amount of aliment, and with an equal amount of digestive power, albumen, cellular tissue, and gelatine, supply twice as small an amount of peptones, that is to say, supply twice as small an amount of nourishment, as if we consumed muscular tissue or casein: valuable experimental reseaches, that explain the cogent reasons why meat supplies a large amount of strength and why it is that a small quantity of cheese supports the poor workman."

Not satisfied with proving the power of the pancreatic juice in converting, in the duodenum, nitrogenised substances into peptones, Dr. Corvisart brings forward the startling doctrine that it also fulfils this duty in the portal circulation, and contends for what he terms a true *intra-venous* digestion. He asserts that this secretion is carried into the portal vein, being absorbed through the medium of the mesenteric veins; that there it reacts precisely as it would on fibrin present in the duodenum, on the globules of fibrin present in the blood, and produces thus a species of true digestion. He founds this novel doctrine on the undoubted fact that the portal blood is richer in albumen than blood drawn from the jugular vein, as proved by an analysis of M. J. Béclard. This increased quantity of albumen he accounts for by the action of the pancreatic fluid, which he presumes to be absorbed, and which he believes to convert the globules of fibrin in the blood contained in these vessels, by a true digestive process, into albumen. This theory is of so novel a character, that we must permit Dr. Corvisart to announce it for himself, merely premising that we are much mistaken in our estimate of his zeal and ability if we do not, and that at no distant period, hear more from him on this subject.

Before quoting Dr. Corvisart's rather startling theory, we think that perhaps our readers would wish for themselves to study the analysis on which it is founded: we therefore submit it for their inspection.

Blood of a dog killed in the active digestion of bread and meat.

BLOOD OF THE JUGULAR VEIN.		BLOOD OF THE PORTAL VEIN.	
Globules, fibrin, . . .	158·20	Globules, fibrin, . . .	58·97
Albumen and salts, . .	62·90	Albumen and salts, . .	162·18
Sum of nitrogenous materials, . .	221·10	Sum of nitrogenous materials, . .	221·15

Dr. Corvisart comments on the result of this analysis in the following terms:—

"This experiment, which, according to this author (M. Béclard), demonstrates that a considerable quantity of albumen

(100 parts) comes from the intestine to enrich the portal vein, leads me, on the contrary, to this conclusion: that the azotised materials of the blood of the portal vein, contrasted with the general venous blood, *have not increased*, through the agency of digestive absorption, *one hundredth part;* in fact, the sum of these materials is this:—

Blood of the jugular vein = 221·10.
Blood of the portal vein = 221·15.

"We know, besides, how little advanced, at the second and third hour of digestion, are the solution, the transformation of meat, and consequently its absorption, so much so, that one would have reason to be astonished, *a priori*, that the products, at this moment digested and absorbed, could already have had the power to triple the primitive quantity of the albumen of the blood, and to raise it from 58 to 162 parts.

"If, in addition, we examine the figures of the preceding analysis, our attention is arrested with one thing, that the azotised materials of the portal vein (compared with the general venous blood) are modified not in their quantity, but in their nature, as if there had taken place in the blood itself a simple transformation of its azotised elements, one with the other; 100 parts of globules and fibrin had made room precisely for 100 parts of albumen.

"It will be remarked that when, by an act of alimentation, the same elements, globules and fibrin, arrive in the *intestine*, they then forthwith undergo on the part of the pancreatic juice a precisely similar transformation into albumen (caseiform) by a commencement of the digestive action.

"Therefore, if I consider that about the second or third hour of digestion, first, the pancreatic juice is poured out in a pure, and consequently active state, into the duodenum; secondly, that it can reach the portal vein, for absorption by the mesenteric veins is not suspended; thirdly, that the pancreatic juice can exercise its digestive action in an alkaline medium, like the blood,—I hesitate not to conclude, however daring at first sight may seem my hypothesis, THAT IN THE PORTAL VEIN THE GLOBULES AND FIBRIN OF THE BLOOD CONDUCT THEMSELVES IN NO OTHER WAY THAN THEY WOULD DO IN THE INTESTINE, UNDER THE INFLUENCE OF THE PANCREATIC JUICE, THEY UNDERGO A COMMENCEMENT OF DIGESTION, AND TRANSFORM THEMSELVES INTO ALBUMEN (CASEIFORM ALBUMEN)."

Dr. Corvisart's treatise concludes with what he terms corollaries, or pathological indications: these, as being legitimate deductions from most ingeniously conceived and most labori-

ously and accurately conducted experiments, we most strongly recommend to the thoughtful perusal of our professional brethren, expressing, however, a fervent hope that this new addition to our Materia Medica, "pancreatine," will not be so extensively, and at the same time so indiscriminately, employed as its elder brother, "pepsine." We do not wish in the least to detract from its remedial virtues when employed in its proper place; but we do most energetically protest against either being employed, in and out of season, to the exclusion of other well-tried and approved medicines. Nothing conduces more to foster empiricism than the universal and indiscriminate employment in the treatment of disease, of any nostrum; nothing eventually can have a more degrading effect on medicine as a science than this blindfold system of therapeutics. It is practice such as this that sanctions, nay, encourages, the employment of such farragoes as Morrison's Pills or Holloway's Ointment. How can we wonder at the public allowing themselves to be imposed on by such charlatans, when we meet with practitioners, who should know better, invariably prescribing *pepsine, et hoc genus omne*, for any disease they are called on to treat. We in our walk have met with such, and with difficulty have suppressed—we were going to say a smile, perhaps we should more truly say a sigh—when hearing pepsine gravely suggested as the one thing needful to conduct back to health the patient already far advanced in phthisis. With such practitioners we fear much that pancreatine will now usurp its place; but for their benefit we must remind them of the fact, that to fulfil any useful indication the pancreatine must escape the gastric digestion, for if it comes in contact with the gastric juice, the action of both will be neutralized. Nothing, however, would afford us greater pain than that Dr. Corvisart should apply these strictures, well merited though they may be by others, to himself or to his researches. We but express an opinion that we are sure he himself would be the first to sanction, when we repudiate the idea that the result of investigations of so important a nature as his are, should be so perverted and misapplied as we fear that they have been.

With these remarks, that we have felt ourselves coerced to give utterance to, we conclude our extracts from Dr. Corvisart's treatise. It is one that does even his reputation honour, and which, to our satisfaction, has established the views that he entertains. That the pancreatic secretion is capable of discharging the functions for which he contends, appears to be established beyond all controversy; but to state that it discharges this function only, is more than we are prepared to admit. On the con-

trary, we feel satisfied that this is but one of many duties which it has to discharge, and from a review of all that has been written on the subject, as the result of the numerous experiments made by the celebrated men to whose labours we have already referred, we should be inclined to assign to it, as its functions, the following as the most important:—

1st. To assist in the conversion of amylaceous matter into sugar.

2nd. To convert fatty matter into emulsions, and thus facilitate their absorption.

3rd. To assist the gastric juice in its function of converting nitrogenised aliments into peptones.

That it enjoys each of these properties has been now established beyond doubt; and there is nothing inconsistent with the laws of physiology in presuming that it is destined to discharge in the organism this triple duty. Frerichs and others have by their experiments put it beyond doubt that it is fully capable of converting starch into sugar; and, as far as we are aware, these conclusions have not been hitherto controverted. That it is not the *only* secretion capable of effecting this metamorphosis is not sought to be established, but that it is one of the group by which this reaction is induced cannot be questioned.

That the second property has been doubted is a fact by this time pretty well known to the readers of these pages; still, for ourselves we must state it as our belief, that the weight of evidence is in favour of the presumption that this, also, is one of its provinces. Bernard's experiments, within and without the organism, all tend to draw our minds to this conclusion—that, when agitated with oily matter, it is capable of producing a most perfect emulsion; an emulsion, also, that is of a permar character is now established by such a number and diversity of experiments, that it can scarcely ever again be called in question. But the results of experiments performed within the economy have been so discordant, so at variance with each other, that we cannot positively assert that this function has been established beyond a cavil; still, as we have stated before, the weight of such experiments is in favour of this view, and when we couple with them the results of such pathological observations as we have at our command, we find that our position is strengthened, and we feel justified in assigning this function also to the pancreas.

The third use that we have assigned to the pancreatic secretion is that so ably advocated for it by our author, Dr. Corvisart. The result of his experiments, as they stand at pre-

sent, can leave no doubt on our minds, but that it is capable of discharging this function; and, indeed, if we examine the literature of the subject, we shall find facts and opinions, not alluded to, however, by Dr. Corvisart, tending to strengthen his views, advanced by some of the most eminent of the chemico-physiologists in whom this century has been so rich: thus we find Bidder and Schmidt giving it as their opinion,—the result, our readers will please to remember, of most extensive research,—that though the gastric juice is the means through which the greater portion of all azotised substances introduced into the stomach is converted into peptones, still, that it is not able to discharge the whole of this duty; consequently, that a portion of nitrogenised aliment in which this metamorphosis has not been produced finds its way into the duodenum; but that, nevertheless, it has been prepared by the action of the stomach in such a manner as to fit it for undergoing this digestion through the medium of the *intestinal* juices. That the stomach does by its action produce some such effect on aliments committed to its charge, and in this respect discharges for the duodenum an office analogous to that which the teeth, in the act of mastication, do for the stomach itself, is admitted on all hands; but that this preparation, aided by the intestinal juices, is the sole agent engaged in converting nitrogenous substances, so situated, into peptones, is questioned not only by Dr. Corvisart, but by many other authorities. Thus, Lehman and Steinhauser introduced into the ileum and large intestines portions of albumen; and, as the result of their experiments, found that they were passed in the excrement perfectly unchanged; this experiment goes even the full length of denying such agency altogether.

In saying farewell to Dr. Corvisart, we do so with a profound conviction of the important obligations under which he has laid his professional brethren, and in the anxious desire soon again to meet him. Whenever we shall do so, we doubt not that we will derive an equal amount of pleasure and instruction from the study of any observations he may vouchsafe us, as we have done from the perusal of his present treatise, therefore we say *au revoir*, Dr. Corvisart, we trust not *adieu*.

An Introduction to Clinical Surgery; with a method of investigating and reporting Surgical Cases. By FURNEAUX JORDAN, Demonstrator of Anatomy at the Queen's College, and Pathologist to the Queen's Hospital, Birmingham. London: Churchill. 1858. 12mo, pp. 155.

THIS unpretending little book fills an experienced vacuum in surgical literature, and fills it so well that it is not probable another author will invade the same province for some time to come.

The author rightly remarks on the numerous contributions to clinical medical research—some of them very excellent—and on the remarkable barrenness of our literature in works relating to surgical matters, of such a kind as to facilitate the investigations of the student; and this constitutes an effective excuse for his own work.

The first chapter constitutes "a clinical inquiry into the present state of surgical investigation," and although Mr. Jordan, like most other advanced surgeons of the era, condemns with severity the laxness with which surgical inquiries are entered upon and carried out, even by those who enjoy the privilege of an hospital position,—we do not think that he has over-estimated the rarity of exact case-taking, and, therefore, of exact knowledge in this branch of our art. The contrast, indeed, in these particulars presented by the medical and surgical sides respectively of hospitals, is universally remarked; and when we consider the general preference of the mass of students for the objective realities—the dramatic situations of the surgeon's side—and that this is the path whereby the arcana of medicine are ordinarily approached by our alumni,—we cannot but regret that more attention is not bestowed by the teachers upon the education of the senses and the development of the judgment at this critical period of their career. Much of the utter futility of hospital attendance may be not unfairly ascribed to this condition of things.

The second chapter consists of "observations on the investigation and registration of surgical cases," in which the author insists on the great importance of a careful minute registration of all visceral changes, and also of all healthy functions, and observes that "the omission of points that seem unimportant to the reporter now may render the case valueless to the surgical investigator ten years hence,—it is better to state that the osseous and articular systems are healthy in a case of piles, than to make no mention of these in an inflammation

of the iris or an eruption of the skin." The importance of such observations will be sufficiently apparent on a very cursory glance over the records of British surgery. Very few complete histories of any surgical malady can be found; and until there is a more just appreciation of the real unity of medical and surgical science, we do not look for much improvement in these histories.

The third chapter sets forth a complete method of investigating and reporting surgical cases, in which we are glad to find the author has given so much prominence to the phenomena of the special senses. We do not despair of seeing the time when general surgeons will consider it disgraceful to be ignorant of the disorders of the eye and ear; and particularly now that surgeons of the high reputation of Bowman and Critchett have disdained to stand on "special" ground. Chomel has made the excellent remark, that, although gentlemen may pay an isolated attention to the different organs or systems of the human body, unfortunately these organs or systems are not isolated in their sufferings. The fashionable specialists of our metropolitan cities would confer a benefit on society if they would recollect this fact. The fourth chapter is but an epitome of the previous one, and admirably fitted for the weaker vessels of student-craft.

In the fifth chapter are described the "instruments and agents used for obtaining surgical information." It is written with care, and several instruments are noticed, such as the ophthalmoscope, still too little used in clinical inquiries. We advise the author to extend this chapter in a future edition, as its brevity is scarcely consistent with a full treatment of this important branch of his subject. In reference to the "exploring needle," it is written that "the too sparing is preferable to the too free use of an instrument which might aid in the diagnosis of a few cases, and do harm in others." He might have added—and furnish an incentive to imperfect investigation on the part of the surgeon. When a man knows that a thorough incision is remediless, if he has made a mistake, he is likely to take every means to avoid error. But if he can escape difficulties and dangers—though he does not escape so often as is imagined—by the use of the needle, he is apt to puncture when he ought to ponder. Whist-books sometimes tell us, "when in doubt to play a trump;" and many physicians seem to think that the playing of that king of trumps, mercury, offers a like relief in *their* perplexities. Similarly, we have thought that many surgeons use the exploring

needle as a safe procedure, when they lack the ability to judge, or the patience to await the evolution of events.

After a brief allusion to post-mortem examinations, we arrive in the seventh chapter at an "analytical estimation of surgical symptoms." This section of the work is highly creditable to the author, who shows in it a deep acquaintance with surgical phenomena. "Doughiness," though rightly appreciated by Mr. Jordan, well merits a separate description in his catalogue; and we also suggest the propriety of stating the physical characters of the urine, such as increased gravity, increased quantity, and heightened colour, under the head of "Pyrexia." The following illustrates the mode in which the author has performed this part of his task: it relates to the common phenomenon of "discoloration:"—

"In acute abscess the integument is red, of a bright, dull, or bluish tinge; in the healing ulcer the granulations are red; in the weak, pale; and in the inflamed, of a claret colour; the surface of sloughing, phagedænic, and sloughing-phagedænic ulcers is grey or green, or yellow, or brown; in gangrene, the parts affected are of a purple, blue, brown or black colour; in lupus, the redness is bright and shining; syphilitic ulcerations and eruptions are of a coppery hue; in cutaneous erysipelas there is a bright scarlet hue; a deeper red marks the cellulo-cutaneous form; and in cellular erysipelas the redness is slight or mottled; in pyœmia, the skin is sallow or of a leaden colour; in cancer, sallow; in scrofula, either very pink and transparent, or very darkly sallow; the skin covering a boil is of a dark red, and that covering a carbuncle, of a claret colour; the skin is red in acute inflammation of periosteum and bone, in acute synovitis, and in acute orchitis; when bone dies it is, presuming it to be visible, at first white, afterwards dark brown or black; nævus presents a bright, dusky, or livid redness; in phlegmasia alba dolens the skin is white; the margin of the eyelids is red in ophthalmia tarsi; in the ophthalmias the conjunctiva is of a bright diffused redness; in sclerotitis, there is a pink zone around the cornea, a similar zone accompanies most of the deeper seated ocular inflammations; in onyx and hypopyon there is a yellow appearance at the lower margin of the cornea, which is more deeply seated in the latter than in the former; in staphyloma of the cornea, the colour is white, finely mottled with black; in arcus senilis, there is a white circle at the margin of the cornea; frequently after the external inflammations of the eye, the whiteness of the sclerotic appears to encroach upon the cornea at its upper and lower margins; in iritis, the iris undergoes important changes in colour, the dark becoming reddish, the blue and grey becoming green; in cataract, there is a white opacity behind the pupil, and, in the same spot, in glaucoma, a greenish or greyish drab tint; in inflammation of the membrana tympani, the

membrane is dull and opaque, or perhaps of a reddish colour; in throat deafness, there is very dark redness of the fauces and tonsils; indolent piles are of a dark, dull, blue colour—an inflamed pile is red; in extravasation of urine, red patches appear in the skin of the perinæum, scrotum, and groins, which are followed by black spots; ecchymosis from injury is evidenced by a succession of the following colours—dark red, black, purple, green, and yellow."

The eighth and last chapter gives, in an elaborate manner, "the synthetic estimation of surgical phenomena." This is the longest, and by far the most important section of the work. Mr Jordan quotes no authors; but has evidently preferred to digest his authorities rather than to display them, and all is tinged with the result of his own powers of observation.

The publication of this book is very opportune for students now about to commence in our schools the study of surgery. To them we earnestly recommend it, as supplying, in a compact form, all that they require, which any book can give, for the purpose of becoming competent to analyze, duly value, and correctly register the phenomena of surgical affections, to the literature of which it is a highly interesting addition.

Medicines: their Uses and Mode of Administration; including a Complete Conspectus of the British Pharmacopœias, an Account of New Remedies, and an Appendix of Formulæ. By J. Moore Neligan, M. D., &c. Dublin: Fannin & Co. 1858. Fifth Edition, 8vo, pp. 620.

The author says in his preface—

"When a book reaches a fifth edition it scarcely requires a preface, yet I cannot present my work on the Materia Medica once more to the profession, without again expressing my gratitude for the favour which it has met with. By a careful revision, and the addition of all new matter which I deemed worthy of being recorded, I have endeavoured to make it of still further use to the practitioner and to the student. My position as Editor of the Dublin Quarterly Journal of Medical Science has, as was the case with the fourth edition, been of much aid to me in bringing the work down to the time of publication, as regards the added matter; and increased experience has emboldened me to select, from the many additions daily made to the list of new medicines, such only as are likely to prove of permanent value."

For the first of the reasons above given, we may safely say that it does not require a review either; and, from causes easily to be understood by our readers, we can do no more than indicate its publication, and quote one of the new articles to show how far it is brought down to the present state of our knowledge on the subject of which it treats. Moreover, the article we quote will prove a proper adjunct to our review of M. Corvisart's book, a few pages back :—

"PEPSINA.—*Pepsine. Medicinal pepsine.* The active principle of the gastric juice in animals. Pepsine combined with starch.

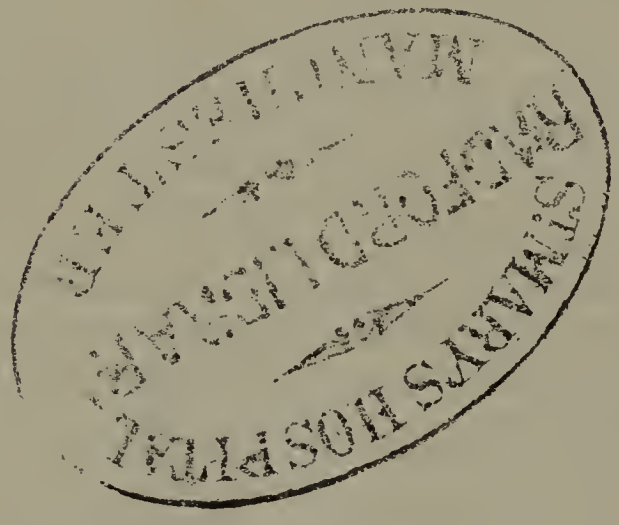
"PREPARATION.—The following is the process proposed by M. Boudault for the preparation of this substance. The rennet bags of sheep are reversed and washed under a stream of water; the mucous membrane is then scraped off with a knife, reduced to a pulpy state, and digested for 12 hours in distilled water. The solution thus obtained is filtered, and neutral acetate of lead added, so as to throw down the peptate of lead, which is then decomposed by a stream of sulphuretted hydrogen. The sulphuret of lead is separated by filtration, and the resulting solution acidulated by the addition of lactic acid. It is then evaporated at a temperature not exceeding 100° F. to a syrupy consistence, and dried starch added in such proportion that one part of the resulting compound will have the power of dissolving four parts of fibrin at a temperature of 98° F.

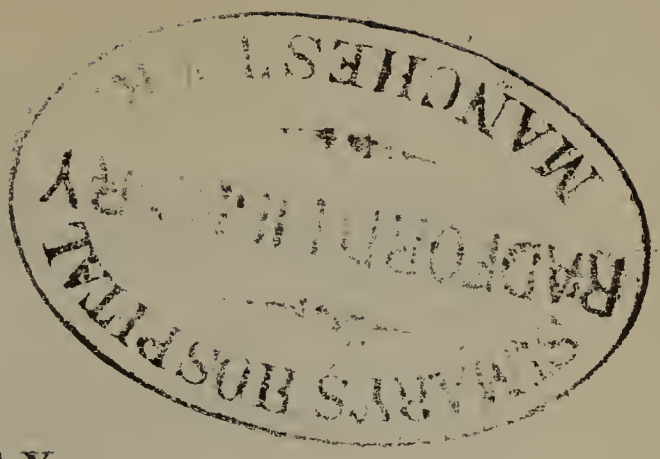
"PROPERTIES.—*Medicinal pepsine* thus obtained is in the form of a fine light powder of a fawn colour, with a faint odour of recently vomited matter, and a nauseous bitter taste. It forms a turbid solution with water in consequence of the presence of the starch, but the pepsine and lactic acid are completely dissolved. It is also soluble in weak spirit, but not in strong alcohol. The watery solution precipitates with salts of lead and mercury, but not with nitrate of silver. If a solution of pepsine in water be heated to a temperature of 120° F., it becomes turbid, and no longer possesses its digestive properties.

"ADULTERATIONS.—Pepsine is often very badly prepared, or undergoes decomposition from being kept in a damp place exposed to the air, and is consequently inert. The only reliable test for its goodness is its power of dissolving fibrin as above indicated. This same test will detect some spurious preparations, which are also sometimes sold for true medicinal pepsine.

"THERAPEUTICAL PROPERTIES.—This substance was first introduced into the practice of medicine by M. Corvisart under the name of *poudre nutrimentive* (*pepsine acidifiée*) as a remedy in dyspepsia and consumption. It can, however, in my opinion be regarded in no other light than as an artificial aid to digestion, supplying the deficiency of gastric juice which exists in some disordered states of the stomach, and therefore should be employed as a palliative only, and not as a medicine. Its properties indicate in what cases it is likely to prove useful; but, like other therapeutical agents too highly vaunted at first, it is now falling much into disuse.

"Dose and Mode of Administration.—Numerous preparations, solutions, syrups, &c., of pepsine have had their proposers and supporters, but M. Boudalt's powder is the only one deserving of use. It may be given in doses of 15 grains immediately before meals, and can be taken when spread between two thin slices of bread and butter, or dissolved in a tablespoonful of soup, which, however, should not be hotter than new milk."





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